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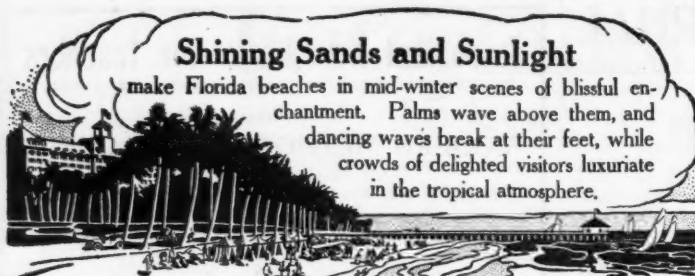
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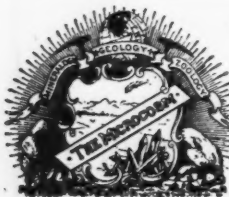
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THE SCHOOL JOURNAL

A Monthly Journal of Education

Vol. LXXVI.

April, 1909

No. 8

OSSIAN LANG, Editor.

The Superintendence Meeting

The discussions at the Chicago convention were actually quite practical. If this sort of thing keeps on we shall soon have forgotten that we ever thought of the sessions of the Department of Superintendence as mid-winter exhibitions of the latest styles of approved pedagogical terminology. Will there be no more apperception meetings, nor correlation and atypical and ics and isms ones? Superintendent Elson boldly brought forward speakers with live messages. The result was that all the meetings were well attended, and everybody felt it was worth while to listen to the papers and addresses.

From the very start, the program showed vitality. The discussion turned about the elimination of waste from school work. With the exception of our beloved Greenwood, who always talks straight from the shoulder, the speakers were new men. And every one of them made good. The papers read by Supt. J. B. Richey, of McKeesport, Pennsylvania, and Supt. Walter R. Siders, of Pocatello, Indiana, were particularly helpful. The former dealt with the simplification of the school program, and the other described how he had managed to take care of the individual in class instruction.

Supt. James M. Greenwood showed what can be done to minimize the retardation of pupils in studies. His paper will be found printed in full in *Educational Foundations* for May.

Dr. Junius L. Merriam, dean of the Missouri State University Teachers College, outlined the principles on which an elementary school curriculum should be organized. He is one of the few college professors of education who manage to keep close to actual schoolroom practice.

The free discussions of the papers bearing on the school program were so very well balanced, so concise and pointed, that it sounded as if they had all been pre-arranged by the genius of President Elson. But they were truly spontaneous and extemporaneous. Thoughtful schoolmen who had followed the addresses with close interest simply got up one after another, each endeavoring to contribute something from his own experience. The suggestion was presented that a committee should be appointed to study the general question of waste in school programs and to report plans for standard curricula.

The duty of the elementary schools with reference to character development was another great topic, ably discussed. The address by District Supt. Arthur D. Call, of Hartford, Conn., on "Moral Enthusiasm" was an inspiring one. He pointed out that the heart must be stirred by noble aspirations if the character is to be profoundly moral and wholly in the service of humanity. The address is printed in full in *Educational Foundations* for April. It was one of the best things presented at Chicago, and is well

worth reading two or three times. Mrs. Ella Lyman Cabot outlined successfully plans for teaching ethics to the young. President Abercrombie, of the University of Alabama, spoke of the urgent need of training in respect for lawful authority.

But the speaker who captured the audience most completely and held it spellbound while he talked of music as the great vitalizing force, was William L. Tomlins. Never was the educational value of singing and voice-training more effectively demonstrated. It was made plain that music can be made a great vitalizing element, filling the whole course of study with life-blood, and affording a training in school service and character development, that nothing else can give quite so well.

At the conclusion of his inspiring address, Mr. Tomlins received an ovation such as is rarely witnessed at a department meeting. The audience, filling the large hall to the doors, continued to applaud, hoping to persuade President Elson to extend the time of the speaker. But the program had to be strictly adhered to.

Dr. William N. Hailmann, who is now associated with the management of a new school at La Porte, Indiana, was warmly greeted as a friend who had been missed for several meetings, when he rose to open the general discussion. He offered a resolution to the effect that a committee of twelve be appointed to examine into the claims advanced by Mr. Tomlins with reference to school music. "Mr. Tomlins," he said, "has just returned from a remarkable work in England, a duplicate of work he formerly did among us, proving that song will develop and expand and strengthen the whole being of the child harmoniously as naught else can do. Different, perhaps, from mere manual doing whose educative value all of us have come to recognize, but which deals largely with a more or less hostile or reluctant environment, song is purest self-expression. The child is auditor and performer, critic and artist, worker and material in one. If Mr. Tomlins has succeeded in finding ways by which the school can in musical instruction emphasize this relation of song to the ethical development of our children, it becomes our solemn duty as educators to assure ourselves fully of this and to induce Mr. Tomlins to prove this to us as fully as the educational authorities of England and Scotland report he has proved it to them."

Every speaker who took part in the discussion of truancy and general delinquency problems was an expert in his field. Bert Hall, head of the Milwaukee truancy department, was a newsboy in his boyhood. Julia Richman is perhaps the best-informed woman concerning children in the crowded tenement sections of New York City. John E. Gunckel has done wonderful work with boys of the street in Toledo.

Nothing specially new, electrifying or edifying was brought out by the speakers on industrial education. The addresses simply served to emphasize that the problems of industrial education are not yet solved, and are not likely to be finally disposed of for some time to come.

The most incisive of the papers in the symposium on the relationship of secondary schools to higher institutions was that of Supt. William E. Chancellor, of South Norwalk, Conn.

George E. Johnson, of Pittsburgh, Pa., gave much helpful advice regarding the hygiene of public playgrounds. It was an excellent idea to have the Department meet in joint session with the American Hygiene Association. Why not have this every year?

The Educational Press Association had one of the most profitable meetings in its history, with the inimitable John MacDonald as president. About fifteen educational papers were represented.

All the Round Tables were well attended. The one of the Society of College Teachers of Education was perhaps the most amusing. Prof. William S. Sutton, of the University of Texas, presided. The papers to be discussed, very good in their way, had been printed in advance. There was a very decided division of opinion as regards the desirability of practice work in connection with university departments of education. Frank McMurtry, of Teachers' College, wanted Charles De Garmo, of Cornell, to speak on the point at issue. Dr. De Garmo wanted to know what he was expected to tell. The witty chairman replied, "The truth." Dr. De Garmo then explained that he was both in favor and opposed to practice schools. It was quite apparent that he tried to defend Cornell's remissness by more or less specious arguments. Another college professor began by saying that he agreed with Dr. De Garmo. Immediately the alert chairman called out, "Which side, please?" The whole meeting showed that the average teaching of education is fearfully and wonderfully made; cut on the bias, a very decided bias. The idea seems to be to look as respectable as possible in the eyes of the scholastic professors. Theory lends itself best to the purpose.

The registration in the Department was close to the thousand mark. Supt. W. H. Elson made a most satisfactory presiding officer. The program was carried out to the letter and on schedule time. Indianapolis was selected as the meeting place for 1910. Supt. Stratton D. Brooks, of Boston, was chosen president; W. C. Martindale, of Detroit, and Julia Richman, of New York City, vice-presidents; and J. F. Keating, of Pueblo, secretary.

Carroll G. Pearce, of Milwaukee; O. T. Corson, of Ohio, and several other good friends united in sending telegrams of sympathy to W. W. Stetson, of Maine, and E. Oram Lyte, of Pennsylvania, whom illness had kept from attending the Department for which they have labored so loyally for many years.

Another very thoughtful act, which it is a pleasure to record, is the dedication of the Albert G. Lane High School, on the Monday preceding the meeting. The Chicago school board thereby afforded the visiting educators a much-appreciated opportunity to do honor to the memory of him who was for many years one of the universally trusted and most beloved mainstays of the N. E. A.

Altogether the meeting was a most enjoyable one. Everybody was glad he was there. And that coming from busy schoolmen is saying a great deal.

City School Problems

Dr. Maxwell has presented to the New York City Board of Education the following recommendations:

1. An assistant, trained in making statistical investigations, should be appointed on the staff of assistants in the City Superintendent's office.
2. Summer sessions should be established in our high schools.
3. A few nurses should be appointed under the direction of the Board of Education to give special attention to the atypical or mentally defective children in the ungraded classes.
4. Principals and teachers should make themselves familiar with the more conspicuous symptoms of mental deficiency, to the end that they may suggest only those who are really atypical to the officers whose duty it is to examine for intellectual deficiency.
5. The immediate establishment of classes for the instruction of the blind.
6. That your Board recommend to the Legislature that the retirement law be so amended that no teacher's pension shall be less than \$750, and no principal's pension less than \$1,500 *per annum*.
7. Immediate steps should be taken to put in practice the recommendations of your Committee on Trade and Vocational Schools—(a) that shopwork be provided for all boys, and sewing and cooking for all girls who are twelve years of age or more in the elementary schools, without regard to the grade in which they are found; and (b) that a vocational school for boys and a vocational school for girls who are over fourteen years of age be established.
8. That the hours for evening schools be fixed at 8 p. m. to 10 p. m., instead of from 7:30 p. m. to 9:30 p. m., and that evening school pupils be charged a small fee to cover the expense of material provided, or else required to make a small deposit of money to be returned at the close of the session in case the attendance is satisfactory.
9. That evening schools to teach English to foreigners be established during June, July, and August.
10. The provision of facilities in each school by which children may be furnished with simple nutritious food at cost price.
11. That a Department of Physical Examination and School Hygiene be established under the control of the Board of Education.

FEEDING THE HUNGRY

If any one consideration should be singled out for most immediate consideration it would seem to be the one with reference to the feeding of hungry school children. The very moderate suggestion made under number 10 may well be given a speedy trial. The question remains, of course, as to who is to furnish the "cost price" to those who haven't got it. Here philanthropic investigation may step in to direct charitable gifts to the right places. As long as the unfed, underfed and malfed children of the poor are not taken care of the schools cannot do their perfect work. The comfortable dwellers in the cities need to be aroused. Dr. Maxwell is rendering a signal service to humanity by persisting in his efforts to make known the hard lot of the children of the poor. Education is wasted on an empty stomach.

STATISTICAL INVESTIGATION

The purpose of recommendation number 1 is made clear by an interesting account of an investigation made by Leonard Ayres, with the assistance of Dr. Gulick into the causes of retardation in the grades. It illustrates what service a trained statistician can render to a large school system, especially when guided and scrutinized by an expert in educational administration.

Mr. Ayres has put forward a number of tentative conclusions. Children were found who had been in school ten, and even eleven years, without reaching the eighth grade. Only fifty-five per cent "progressed normally," while forty per cent "progressed more slowly than the normal rate," and five per cent "reached their present standing in the grades by more rapid than normal progress." These conclusions may properly be accepted as fairly describing existing conditions. In view of the limitations of the investigation, the lack of concise qualification of terms, and the failure to indicate precisely the number of points taken into consideration (such as material and social condition of parents, employment of children before and after school hours, provision and facilities for home work, etc.), the following conclusions can be accepted only as suggestions for interesting lines of further research:

The smallest percentage of retardation is found among the Germans (16.6).

The next best showing is made by the Americans (19.6).

The Russians show exactly the same percentage as the entire group (22.9).

The Irish make a poor showing (29.5).

The Italians show decidedly the highest percentage of retardation.

Boys show substantially the same percentage of retardation as girls. (Boys 22.2; girls, 23.6.)

It is to be hoped that the term "Americans" will be rigidly eliminated from investigations of this nature. All the children in the schools are Americans. Who will rise to deny this? If there is to be a differentiation along lines of nationality let it be stated as "native-born," and "born in _____." Furthermore, in extending this investigation to the parentage of children, let the same division be followed. The number of years the parents have lived in this country would also demand inquiry, as a matter of justice. But of what use are statistics of this sort, unless the conditions under which the parents lived in foreign countries are taken into account? The girl brought up in the city of Paris is not in the same class with one reared in a Gascon hamlet or a Breton fisher hut. Nor can the boy reared in Dresden be grouped with the peasant youth who was practically living the life of a bond-slave on an estate in Posen. A statistician who deliberately undertakes impossible classifications runs the risk of having his really sane conclusions lose authoritativeness.

Here are a few statements that follow sound lines of inquiry, but need further support:

Among the 19,328 pupils whose records were studied, 7,608 had been given physical examinations by the physicians of the Board of Health. This is approximately 39 per cent.

Children of normal age have more physical defects than retarded children. (Normal age, 80 per cent; above normal age, 75 per cent.)

Children in the lower grades have more defects than those in the upper grades.

Defective children in the first grade have about 2.5 defects apiece; those in the eighth grade about 1.3.

Defective vision is the only defect more prevalent among retarded children than among children of normal age.

All defects except defective vision decrease with age. Forty per cent. of the 7-year-old children have enlarged glands; only 6 per cent of the 15-year-old ones have them. Twenty-five per cent of the 7-year-old children have adenoids; only 3 per cent of the 15-year-old ones have them. Among 8-year-old children, 17.5 per cent have defective vision. At the age of 14, 27.7 per cent have defective vision.

Of the boys, 78.5 have physical defects; of the girls, 79.2. Boys average 1.8 defects apiece; girls, 1.6. Boys suffer more commonly than girls from enlarged glands, defective breathing, enlarged tonsils and adenoids. Girls have poorer teeth and poorer eyesight.

Dr. Maxwell adds this judicious comment:

The conclusion that will cause most surprise is that physical defects play a much less important part in retarding children's progress in school than has been supposed. In view, however, of the unsatisfactory character of the physical examinations hitherto conducted by the Department of Health, too much stress should not be laid on this finding. Whether the increasing absence of physical ailments, and subsequently improved physical condition in children as they grow older and advance through the grades, is the result of the survival of the fittest, or of the regular discipline, intellectual, moral, and physical, of the schools, or of both causes, remains to be determined.

A strong point is made for the need of unification of work in the school system of a city which has a constantly shifting population. Superintendents, principals and teachers must co-operate "to minimize the necessarily injurious effects of transfer from one school to another."

Education's Loss

The sad news comes from Scotland that Prof. Simon Somerville Laurie, of the University of Edinburgh, has died. He is known to American teachers more especially thru his pedagogical writings. His book on Comenius has long been considered a standard work. The same may be said of his "Rise of Universities." The "Historical Survey of Pre-Christian Education," too, is a monument of pedagogical scholarship. "Institutes of Education" is to be found in many pedagogical libraries. His latest book was brought out under the title "Studies in the History of Educational Opinions, from the Renaissance." His work in ethics, metaphysics and "natural theology" has won him distinction in the field of general philosophy. He died at the age of eighty years.

Carroll D. Wright was perhaps better known as an authority on labor questions than as an educator, but his reports and addresses have influenced educational thought in several ways. He was our first Federal Commissioner of Labor, and later became president of Clark College, at Worcester, Mass. He died February 20th.

In Theodore B. Noss American education loses a warm-hearted, conscientious worker, whose life was consecrated to the profession he had espoused. He was among the first schoolmen to undertake the study of German pedagogy. His good counsel and sympathetic interest were in no small degree helpful in the planning and organization of a departure which later developed into the New York University School of Pedagogy. He was connected with the normal school at California, Pa., for something like thirty years, twenty-six as president of the institution. He and Mrs. Noss always traveled and worked together. They spent considerable time in Europe and visited nearly all the old-world countries. They rarely missed a meeting of the Department of Superintendence or the N. E. A. The heartfelt sympathy of many hundreds of teachers will go out to Mrs. Noss and the two children. Dr. Noss was laid low by a sudden attack of pneumonia, while in attendance at the Department of Superintendence, in Chicago, and died on March 1.

Reading Course for the Well-Read Teacher

Designed for Leisurely Reading from One's Own Books

(Continued from January SCHOOL JOURNAL)

Class IV.—The Drama

I. ANCIENT CLASSICAL DRAMA

1. Euripides' "Alcestis."
 - a. Collateral Reading—Browning's "Balaustion's Adventure."
2. Æschylus' "Agamemnon."
3. Aristophanes' "Birds."

II. SIXTEENTH CENTURY DRAMA

1. Green's "Friar Bacon and Friar Bungay."
2. Shakespeare's "As You Like It," "Macbeth," "Henry IV," "Henry V," "Henry VI."

III. SEVENTEENTH CENTURY DRAMA

1. Molière's "Tartuffe."

IV. EIGHTEENTH CENTURY DRAMA

1. Goethe's "Faust."
2. Sheridan's "Rivals."
3. Goldsmith's "She Stoops to Conquer."
4. Schiller's "Joan of Arc."

V. NINETEENTH CENTURY DRAMA

1. Ibsen's "Doll House."

Class V.—Romances of Unreal Life and Adventure

I. ANCIENT CLASSICAL ROMANCES

1. Apuleius' "Golden Ass." (Containing the story of "Cupid and Psyche," so often referred to in literature.)

II. MISCELLANEOUS PROSE ROMANCES

1. Cervantes' "Don Quixote," Bohn's Edition. (Read from Volume I., Chapters 1—3, 7, 8, 10, 21, 16, 17, 35, 45, 49; from Volume II., Chapters 5, 8, 10, 17, 25, 27, 33, 42, 43, 44, 45, 47, 49, 53, 71, 74.)
2. Le Sage's "Gil Blas." (Read Books 1, 4, 10, 12.)
3. More's "Utopia."
4. Dumas' "Three Musketeers."
5. Walpole's "Castle of Otranto."

III. METRICAL ROMANCES

1. Scott's "Lady of the Lake," "Marmion," "Lay of the Last Minstrel."
2. Spenser's "Faerie Queene." Book I.

IV. THE EPIC

1. Milton's "Paradise Lost." (Read Books 1, 2, 4, 9, 11, 12.)
2. Dante's "Divina Commedia." (Read from the Inferno, Cantos 1, 2, 10, 12, 15, 90; from the Purgatorio, Cantos 1, 6, 15, 18, 23, 27, 30, 31, 32, 33; from the Paradiso, Cantos 1, 2, 7, 10, 14, 17, 21, 27, 30, 32, 33.)

V. ROMANCES OF UNREAL ADVENTURE SO TREATED AS TO GIVE THE ILLUSION OF REALITY

1. DeFoe's "Robinson Crusoe."
2. Swift's "Gulliver's Travels."
3. Bunyan's "Pilgrim's Progress."

Class VI.—Historical Narratives in which the Adventure Motif is No Longer Beyond the Bounds of Possibility

1. Blackmore's "Lorna Doone."
2. Bulwer's "Last Days of Pompeii."
3. Cooper's "Last of the Mohicans."
4. Kingsley's "Hypatia."
5. Wallace's "Ben-Hur."
6. Porter's "Scottish Chiefs."
7. Thackeray's "Henry Esmond."
8. Scott's "Ivanhoe," "Rob Roy," "Kenilworth."
9. Reade's "Cloister and the Hearth."
10. Stevenson's "Master of Ballantrae."

Class VII.—The Novel

I. NOVELS OF CONTEMPORARY LIFE, CREATING CHARACTER TYPES, BUT RETAINING THE ROMANTIC MOTIF OF IMPROBABLE ADVENTURE

1. Fielding's "Tom Jones."
2. Smollett's "Humphrey Clinker."

II. THE NOVEL OF QUIET DOMESTIC LIFE AND HOMELY SCENES

1. Goldsmith's "Vicar of Wakefield."
2. Burney's "Evalina."
3. Austen's "Emma."
4. Gaskell's "Cranford."
5. St. Pierre's "Paul and Virginia."

III. SIMILAR TALES IN VERSE

1. Tennyson's "Enoch Arden."
2. Mrs. Browning's "Aurora Leigh."

IV. THE REALISTIC NOVEL—BASED UPON THE PERSONAL EXPERIENCES AND OBSERVATIONS OF THE AUTHOR: THUS GIVING A VIVID PICTURE OF THE AUTHOR'S ERA

1. Balzac's "Eugenie Grandet."
2. Dickens' "Pickwick Papers."
3. Black's "Macleod of Dare."
4. Thackeray's "Vanity Fair."
5. Borrow's "Lavengro."
6. Hugo's "Les Misérables."
7. Lover's "Handy Andy."
8. Howells' "A Modern Instance."
9. Kipling's "Kim."

V. THE PSYCHOLOGICAL NOVEL

1. Hawthorne's "Scarlet Letter."
2. Brontë's "Jane Eyre."
3. Meredith's "Egoist."
4. Eliot's "Adam Bede," "Mill on the Floss."
5. Hardy's "Tess of the D'Urbervilles."
6. Goethe's "Wilhelm Meister."

(To be continued)

Memory Gems for Grammar Grades

(Saturdays and Sundays omitted)

APRIL 1

April is here!
Listen, a bluebird is caroling near!
Low and sweet is the song he sings,
As he sits in the sunshine with folded wings,
And looks from the earth that is growing green
To the warm blue skies that downward lean,
As a mother does, to kiss the child
That has looked up into her face and smiled.
—EBEN EUGENE REXFORD.

APRIL 2

The winter being
over,
In order comes
the spring,
Which doth green
herbs dis-
cover,
And cause the
birds to sing.
—ANNE COLLINS.

APRIL 5

Think naught a
trifle, tho it
small appear;
The sands make
the mountain;
moments the
year;
Trifles make life.
—YOUNG.

APRIL 6

Yet April waters,
year by year,
For laggard May
her thirsty
flowers;
And May, in gold
of sunbeams
clear,
Pays April for
her silvery
showers.
—LUCY LARCOM.

APRIL 7

Knowledge is the
hill which few
may hope to
climb;
Duty, the path that
all may tread.
—MORRIS.



Blackboard Calendar, Designed by Anna Eastham.

APRIL 8

I am very glad the spring is come,—the sun shines
out so bright,
The little birds upon the trees are singing for
delight.
—M. A. STODART.

APRIL 9

Nobility lies in the mind, not in the blood.

APRIL 12

Amid a hedge, where the first leaves
Were peeping from their sheaths so shy,

We saw four eggs within a nest,
And they were blue as the summer's sky.

APRIL 13

We scatter seeds with careless hand,
And dream we ne'er shall see them more;
But for a thousand years
Their fruit appears,
In weeds that mar the land,
Or healthful store. —JOHN KEBLE.

APRIL 14

Every hour that
fleets so slowly
Has its task to
do or bear;
Luminous the
crown and
holy,
If thou set each
gem with
care.
—ADELAIDE A.
PROCTOR.

APRIL 15

It is my faith that
every flower
Enjoys the air it
breathes.
—WORDSWORTH.

APRIL 16

Be patient! oh, be
patient! Put
your ear against
the earth;
Listen there how
noiselessly the
germ o' the seed
has birth—
How noiselessly
and gently it up-
heaves its little
way,
Till it parts the
scarcely broken
ground, and the
blade stands up
in day.
—RICHARD C.
TRENCH.

APRIL 19

There's a maple-
bud redder to-
day;

It will almost flower to-morrow;
I could swear 'twas only yesterday
In a sheath of snow and ice it lay,
With fierce winds blowing it every way.
—HELEN HUNT JACKSON.

APRIL 20

Build a little fence of trust around to-day,
Fill the space with work and therein stay;
Look not thru the bars upon to-morrow,
God will help thee bear what comes of joy or
sorrow.

—ANONYMOUS.

APRIL 21

Ill habits gather by unseen degrees,
As brooks make rivers,
And rivers run to seas.

—DRYDEN.

APRIL 22

There are notes of joy from the hangbird and wren,
And the gossip of swallows thru all the sky;
The ground-squirrel gaily chirps by his den,
And the wilding bee hums merrily by.

—WILLIAM CULLEN BRYANT.

APRIL 23

Ye coax the timid verdure,
Along the hills of spring,
Blue skies and gentle breezes,
And soft clouds wandering!
The choir of birds on budding spray,
Loud larks in ether sing;
A fresher pulse, a wider day,
Give joy to everything.

—WILLIAM ALLINGHAM.

APRIL 26

Attempt the end, and never stand in doubt,
Nothing's so hard but search will find it out.

—HERRICK.

APRIL 27

Small service is true service while it lasts;
Of humble friends, bright creature! scorn not one:

The daisy, by the shadow that it casts,
Protects the lingering dewdrop from the sun.

—WORDSWORTH.

APRIL 28

April brings the primrose sweet,
Scatters daisies at our feet.

—SARA COLERIDGE.

APRIL 29

There's not a cloud upon the sky,
There's nothing dark or sad;
I jump, and scarce know what to do, I
Feel so very glad.
God must be very good indeed, who
Made each pretty thing:
I'm sure we ought to love Him much
For bringing back the spring.

—M. A. STODART.

APRIL 30

April and May one moment meet,—
But farewell sighs their greetings smother;
And breezes tell, and birds repeat,
How May and April love each other.

—LUCY LARCOM.



A Summer View of Adams Playground, Chicago.

How public playgrounds promote exercise that will brighten the lives of the little children and give them health.

Practical Nature Study

By FRANK OWEN PAYNE

Seed Study--I

In the March issue of THE SCHOOL JOURNAL (1) I endeavored to show that nature-study may be and ought to be practical, and (2) a series of practical topics was offered as suggestive of what may be presented to this end.

It is the purpose of this and the following contributions to offer many of these topics for fuller consideration, and to submit some schemes for presentation of such topics.

The botanical aspect will first receive consideration, because plant material is cheap, easy to obtain, and convenient to handle.

In the main, the experimental form will be employed, first, because it is the nearest approach to the method of nature, second, because it is a method which appeals most directly to the pupil, thus awakening his interest, and third, because it is in line with the best scientific research.

There is a natural and logical order in nature study, whether of the theoretical or practical sort. I venture to give it here for the benefit of young or inexperienced teachers. It may be stated as follows:

- (1) See the object to be studied.
- (2) Observe it.
- (3) Talk about it, or better ask such questions as will compel the pupils to talk about the things under observation.
- (4) Draw, where such a thing is possible or practicable.
- (5) Write about it in concise language.

If it is to be a description, a few well-phrased sentences are enough. If it be an experiment, the following is an excellent form of recording:

- (1) The object of the experiment.
- (2) The apparatus used in making the experiment.
- (3) The method employed with the result which followed each step.
- (4) The conclusion.

An experiment has been well defined as *a question asked of nature*.

In the foregoing scheme for recording an experiment, the question asked will always be the object, and the answer to that question will be the conclusion. This will become apparent when actual experiments are taken up.

I. SEEDS AS SOURCES OF FOOD

The most convenient object to begin with is the seed. It stands at the beginning of plant life as seen by the naked eye. The seed is a baby plant. This in itself commends seed-study to the young. There is a bond of sympathy between the young of all animate things. Lambs, colts, calves, chicks, appeal to the child. They arouse his interest as nothing else can do. To a lesser degree, but quite as truly, the tiny embryo plant packed away in its protecting seed coats and supplied by Mother Nature with its food for future growth becomes an object worthy of consideration.

Material for seed study can be easily secured. Large seeds are always preferable. Beans, peas, squash, acorns, chestnuts, almonds, and horse chestnuts are among the best for study.

A casual glance at such seeds will disclose the

fact that in spite of their varying colors, surface, and shape, they have one characteristic which makes them all alike. They all have somewhere a scar (hilum), showing where they were attached to the inside of the fruit from which they came.

This scar varies in size, color and position, but every seed has a scar somewhere upon its surface. In the bean it is near the middle of the concave side; in the squash, pumpkin and melon, at the pointed end; in the almond, chestnut, and acorn, at the large end; and in the pea and horse chestnut on one side. There is also on most seeds a minute hole or pore (the micropyle) which may be in the scar, near it, or on the opposite side from it.

The coats or coverings of the seed must not escape observation. The outermost coat (testa) is a protection to the little plant within, but sometimes it is clothed with down, hairs, hooks or other organs which assist in carrying the seed away, and thus help nature to spread the species. In grains, there are several coats which must be removed by grinding and sifting, hence the relation between the manufacture of flour and coats of the seed.

Having soaked the seeds in tepid water for a few hours, the coats may be easily removed and the baby plant (embryo) lies revealed.

In the seeds mentioned above, the two thickened leaves (cotyledons) can be seen, and also the pointed end (hypocotyl), and usually the bud (plumule) which is destined to form the entire body of the future plant.

Drawings should be made of the outside appearance of the seeds studied, and of various aspects of the embryos. Collections of seeds should be encouraged. These are best made by providing small bottles for small seeds and trays for those of larger size.

The seeds of commerce may be rudely grouped into four classes: (1) Those which are used for food, as wheat, corn, peas, beans, nuts, etc.; (2) those which produce food products, as tomato, turnip, radish, etc.; (3) those which yield a marketable product, as cotton, flax, castor bean, cocoa, etc.; (4) those which produce plants valuable for ornament, as nasturtium, phlox, mignonette, and other flowering and decorative plants.

The foregoing classification leads to many interesting fields of study and observation.

Milling processes will be far better understood by him who knows the structure of a grain of wheat. The many closely wrapped envelopes must be removed before the nourishing kernel is reached. Every child should visit a mill and see how flour is made. First, the grinding; second, the bolting, repeated again and again until the indigestible outer portions have been removed and the nourishing portions saved for food. Accessory to this, there is also a chance to see the operation of steam engines or water wheels. These always appeal to the visitor, whether child or adult.

Collections of seed products, properly labelled and classified, are always helpful in making this work interesting and practical. Such, for example, are a series representing whole wheat and every stage in the process of flour making, or corn and every variety of corn product. For example, the writer's collection of corn products contains the following:

Indian corn	10 varieties
Sweet corn	3 varieties
Pop corn	3 varieties
Corn meal	3 grades
Hominy	
Samp	
Corn starch process	20 specimens
Glucose	4 specimens
Hulled corn	
Corn flakes	
Popped corn	3 preparations
Parched corn	
Corn oil	2 samples
Feed	3 varieties

Similar collections illustrating all the useful seeds are possible, and the practical value of such material can not be gainsaid.

In a similar manner, oils, flavors, and other seed extractives may be considered. Pepper, nutmeg, tanga beans, castor and croton beans, anise, are examples.

In the foregoing work on seeds, a great deal of help can be obtained from the publications of the Agricultural Department at Washington and the bulletins of similar state institutions.

These publications, altho intended primarily for the farmer, are of use to others as well, and their value to the teacher of nature study can not be over-estimated.

In the next paper we shall consider "Seeds and Germination," and endeavor to show the relation of certain agricultural processes to the growth of crops.

Dandelions

BY LILIAN C. FLINT, MINNESOTA.

The wee rosettes that dot the cool grass in the spring are marvels of ingenuity and adaptation. They are almost the first flowers to come after the wood beauties. They are creatures of sun and shine, ideal flowers like fallen stars.

It is, in its form, an example of the flowers that gather themselves into heads, and make the very smallest amount of energy do for the whole family, instead of spending it on one blossom. A dandelion head is composed of hundreds of little blossoms, as may be seen by picking it apart.

So it is not a flower but a head of flowers. Its first protection is the thick row of green leaves around the head. This wraps over it when the flowers are too small to be strong enough to look out for themselves, and after the flower has done its work, these same leaves wrap softly over the seeds, with their green mantle, and keep them safe until the warm days have ripened the seeds.

Another of the dandelion's advantages is the long root by which the plant anchors itself as firmly as does a tree to the earth. It defies the wind and also defies you to pull it up, it has taken such a good deep hold on the earth. Dandelions are never freaks, they are always the same, never changing their color or shape, no matter how much they are encouraged to do so. The only change that I ever saw was a single stalk carrying two heads of flowers.

The main business of all flowers is to produce seed, and the clever dandelion plant has this in mind from the beginning, by collecting all the wee flowers in one body and putting around them the protecting green blanket, which shuts in cold and wet weather. After a while the flowers or yellow parts fall off, and then the green mantle folds itself around the seeds which are still on the head,

and the dandelion lies close down on the earth, hugging it tight. The little seeds, safely out of the way of any stray animals that might come -browsing along, leisurely ripen in the warm summer.

When the seeds are ripe and ready to fly, the plant has its sails all ready. Around each blossom is a tiny tuft of hairs to help float it off to another place. Before the seeds were ripe the round head was sunken in and held the little seeds closely. Now that they are ready to leave their parent, the head has taken just the opposite position and bulges out like a thimble.

So we see a gossamer sphere which is a regular fort, and fairly quivers to shoot forth its dart-like seeds. The seed are made so that they will float along in the air, for the silky hairs make it possible for them to do this, and they are carried further and further by the wind, while without this means of navigating the air they would fall at the foot of the flower.

Besides a sail, the seed has a mast and anchor, ready for the voyage of life. From lying down to get its work done, it now stands erect and alert, for its life-work is nearing completion. Besides the sail at the lower part there are little grappling hooks that act the part of an anchor. They are wee barbs, and as the seed goes rollicking along, they catch in anything that will hold them. Often it is a brush-heap, and once caught the tiny umbrella of hairs that floated off the seed on its journey shuts up, and lets the seed sink slowly down to the ground, where it is to make its future home. If a stray gust of wind reaches it before it has safely reached the earth and tries to start it on again, the little barbs catch hold of any wee branch and hold on safely until the wind has blown out its gale.

A dandelion is a determined thing. You may find the blossoms in almost any month of the year, if they have a little protection. They are an immense crop every July or August, and flourish in unkempt lots where they are never shorn or watered.

Let us take stock of their devices. First there is the one of living altogether instead of separately. Then the green awning that is drawn over and opened at will to protect from rain and cold. Next the hairs that will set them forth on their journey in search of another homestead. Again, the tall mast to which the seed acts like the weight on a balloon and keeps the silky hairs upright. Then the grappling hooks that enable the seed to anchor and stay in its future home. There is the trick of lying down all summer for the seeds to ripen and thus keeping out of the way of any stray animal that might be grazing about and eat it up. And then when it is all ready straightening up with its gray balloon in clusters all over the countryside. And its long tap-root that goes down deep so that the plant is never at a loss for drinks of water.

Of what use is it? Children weave it into some fashion of wreaths, and chains and balls, and play queer music on its stem, blowing thru it until the end splits and curls, and the youngsters make wry faces over the bitter milk.

It grew first far away in Asia, but in this country it is all over the fields and meadows. It is gathered and cooked in the spring, the markets of our large cities are full of green baskets of it. It is used for medicine.

In the fall comes a giant flower that in many ways follows the plan of the dandelion in its manner of getting on in the world. This is the sunflower. It grows to the height of nearly eight

feet, and the flowers are on long stems. The disk is a beautiful seal brown, full of tiny vases of flowers, around them yellow leaves and green bracts, after the manner of the dandelion. It is called the sunflower because it is large and round and has yellow rays. These rays fold over at night and in cold wet weather and so protect the tiny little flowers from harm.

The rays, and indeed the colored parts of all

flowers, are more bitter, and altho they attract insects by their bright colors, they are not so edible as the leaves and so escape being destroyed. The parts of the sunflower are easily seen and it is delightful to compare the two flowers, dandelion and sunflower, and in the fall they can both be found.

It is such thoughtful study of insects or plants that will get results.

Lessons and Poems for Arbor Day

Of the infinite variety of fruits which spring from the bosom of the earth, the trees of the wood are greatest in dignity. Of all the works of creation which know the changes of life and death, the trees of the forest have the longest existence. Of all the objects which crown the gray earth, the woods preserve unchanged, throughout the greatest reach of time, their native character. The works of man are ever varying their aspect; his towns and his fields alike reflect the unstable opinions, the fickle wills and fancies of each passing generation; but the forests on his borders remain to-day the same as they were ages of years since. Old as the everlasting hills, during thousands of seasons they have put forth and laid down their verdure in calm obedience to the decree which first bade them cover the ruins of the Deluge.

—SUSAN FENIMORE COOPER.

Under the Apple Tree

In a home-nest of peace and joy,
Bright and pleasant as a home can be,
Lives a merry and sweet-faced boy
Under a broad old apple-tree.
Searching wide, you will seldom meet
Child so blithesome and fair as he,—
How can he help being pretty and sweet,
Dwelling under an apple-tree?

In the spring when the child goes out,
Glad as a bird that winter's past,
Making his flower-beds all about,
Liking best what he finished last;
Then the tree from each blossomy limb
Heaps its petals about its feet,
And like a benison above him
Scatters its fragrances, sweet to sweet.

In the summer the dear old tree
Spreads above him its cooling shade,
Keeping the heat from his cheek, while he,
Playing at toil with rake and spade,
Chasing the humming-bird's gleam and dart,
Watching the honey-bees drink and doze,
Gathers in body and soul and heart,
Beauty and health like an opening rose.

In the autumn, before the leaves
Lose their greenness, the apples fall,
Roll on the roof, and bounce from the eaves,
Pile on the porch, and rest on the wall;
Then he heaps on the grassy ground
Rosy pyramids brave to see;
How can he help being ruddy and sound,
Dwelling under an apple-tree?

In the winter, when winds are wild,
Then, still faithful, the sturdy tree
Keeps its watch o'er the darling child,
Telling him tales of the May to be;
Teaching him faith under stormy skies,
Bidding him trust when he cannot see;
How can he help being happy and wise,
Dwelling under an apple-tree?

—ELIZABETH AKERS ALLEN.

To a Pine Tree

Far up on Katahdin, thou towerest,
Purple-blue with the distance and vast;
Like a cloud o'er the lowlands, thou lowerest,
That hangs poised on a lull in the blast,
To its fall leaning awful.

In the storm, like a prophet o'ermaddened,
Thou singest and tossest thy branches;
Thy heart with the terror is gladdened,
Thou forebodest the dread avalanches,
When whole mountains swoop valeward.

In the calm thou o'erstretchest the valleys
With thine arms, as if blessings imploring,
Like an old King led forth from his palace,
When his people to battle are pouring
From the city beneath him.

Spite of winter, thou keep'st thy green glory,
Lusty father of Titans past number!
The snowflakes alone make thee hoary,
Nestling close to thy branches in slumber,
And thee mantling with silence.

Thou alone know'st the splendor of winter,
'Mid thy snow-silvered, hushed precipices,
Hearing crags of green ice groan and splinter,
And then plunge down the muffled abysses
In the quiet of midnight.

Thou alone know'st the glory of summer,
Gazing down on thy broad seas of forest,
On thy subjects that send a proud murmur
Up to thee, to their sachem, who towerest
From thy bleak throne to heaven.

—JAMES RUSSELL LOWELL.

Elm Versus Apple

The elm, in all the landscape green,
Is fairest of God's stately trees;
She is a gracious-mannered queen,
Full of soft bends and courtesies.

But though her slender shadows play
Their game of bo-peep on the grass,
The hot kine pause not on their way,
But panting to the thick oaks pass.

And though the robins go, as guests,
To swing among the elm's soft leaves,
When they would build their snug round nests
They choose the rough old apple-trees.

The apple has no sinuous arms,
No smooth obeisance in her ways;
She lacks the elm's compliant charms,
Yet she commands my better praise.

—MAY RILEY SMITH.

Arbor Day Reproduction Stories

A Sermon from a Thorn-Apple Tree

I want to tell you about my thorn-apple tree. It came up by the gate, where it gets the drip from the watering-trough; that's what made it grow so strong and handsome. Every year it is just as full of blossoms as the apple trees, and you know what it bears—little red seedy berries, good for nothing at all, so I used to think. But the first spring after I was sick, when I was thinking how pretty it was—all blown out, and the green leaves peeping thru the white—it just came to me that the thorn-apple was doing what it was made for exactly the same as the russet trees and the pippins; and I took notice, as I never did before, how the squirrels came to eat the seeds in the fall, and how the blue-jays and the winter-birds seemed always to find something there for a breakfast, and I came to love that thorn-apple and enjoy it more than anything else.

It always seemed to have some lesson for me. I call it my preacher, and whenever I look at it I think the Lord wants thorn-apples as well as pippins. He sets a good many of His children to feeding birds and squirrels, and doing little things that nobody takes any note of, and I'm thankful every day that He lets me grow the blossoms, and feed His birds. Perhaps that is all He may want of you, Ruby, but don't you be troubled about that. "Abide in Him," as the branch abideth in the vine, and He'll see to the fruit. It will be just the kind He wants you to bear.

—Emily Huntington Miller's "Thorn-Apple."

The Oak and the Mistletoe Seed

A seed of the beautiful mistletoe was separated from its parent. It went forth in search of a home wherein it might receive protection and care. "Perhaps," said the little seed to itself, "I may one day be a large and beautiful plant like that from which I have sprung."

It knew by instinct that the earth, in whose bosom the mighty forest trees buried their spreading roots, would have no welcome for a seed of mistletoe; that it must seek elsewhere the rest and nourishment it so desired. "Surely there must be room for me in the world!" the wandering seed exclaimed.

Seeing a stately elm, it thought, "Here is a tree that must be as generous as he is stately; here shall be my home." But the elm was not generous. He scorned the humble petition of the seed, and said there was not a corner in his branches for a beggar. In vain did the seed plead its great need of help; the elm was as hard as a stone, and cared not at all for the tiny creature's sorrow.

A beech near by was even more narrow-minded than the elm, and fairly drove the seed away with the angry question: "Why should I afford a resting-place to vagrant shrubs of your kind?" and the poor, weary wanderer began to think that it would be as well to die at once as to die at the end of a long, fruitless pursuit.

An oak in the forest, to whom the seed next appealed, listened to the sorrowing voice of the wanderer, and was more merciful than the elm or the beech had been. Satisfied at last, the little seed found rest in the arms of the mighty oak. Before long a delicate green leaf appeared, and then another and another; and in time a beautiful shrub grew upon the great forest tree.

When the summer had passed, the winds of autumn came moaning thru the woods, and the leaves fell in showers. The stately elm lost its beautiful foliage, the beech stood bare and shivering in the blast, and even the hospitable oak saw his splendid drapery of green change and fall. And soon the winter's ice and snow made the forest desolate. Yet was the oak grand and attractive still.

The mistletoe covered the broad bosom of the tree, and was indeed life in the midst of death. Strong and ever green, the winter could not rob it of its beauty or its strength. Its waxen berries, rivaling the snow in whiteness, seemed to the beech and elm like so many mocking eyes turned upon them. But to the venerable oak they were like rare and precious jewels.

One fine day in winter, the oak made this speech to a merry little group who stood admiring the mistletoe: "When I received a tiny straying seed and gave it my protection, do you suppose that I knew what would follow? If I had stood in the forest destitute of leaves as my fellow-trees are, would you have gathered around to admire me?"

"I know that the mistletoe, with its white berries, attracted your eyes, yet am I not proud to bear that shrub in my arms and to call it my foster-child? Kindness enriches both the giver and the receiver. In my long, long life I have learned many lessons, but this is the best of all: be kind for the very sake of kindness, and you will have your reward."

—Selected.

The Acorn and the Pumpkin

A country lad, as he lay one day stretched out upon his back beneath a large oak, observed the runner of a pumpkin, with heavy fruit on it, climbing upon a hedge near at hand.

He shook his head at this, and said, "It is very odd to see such immense fruit on so slender a stem, and these tiny acorns up there on this great oak. I really think it would have been better if these big, yellow pumpkins, the size of a man's head, had been made to grow upon the stout tree, and those small acorns, not so large as my thumb, upon the creeping plant."

He had scarcely done speaking, when a good-sized acorn fell right upon his nose, and gave him rather a sharp rap.

As he jumped up, rubbing the sore place, he could not help saying: "But if that had been a pumpkin that fell just now, it would have been all over with my poor nose." And this was not quite so stupid as what he said before.—Selected.

The Tree That Tried to Grow

One time there was a seed that wished to be a tree. It was fifty years ago, and more than fifty—a hundred, perhaps.

But first there was a great bare granite rock in the midst of the Wendell woods. Little by little, dust from a squirrel's paw, as he sat upon it eating a nut; fallen leaves, crumbling and rotting,—and perhaps the decayed shell of the nut,—made earth enough in the hollows of the rock for some mosses to grow; and for the tough little saxifrage flowers, which seem to thrive on the poorest fare, and look all the healthier, like very poor children.

Then, one by one, the mosses and blossoms withered, and turned to dust; until, after years

and years and years, there was earth enough to make a bed for a little feathery birch seed which came flying along one day.

The sun shone softly thru the forest trees; the summer rain pattered thru the leaves upon it; and the seed felt wide-awake and full of life. So it sent a little pale-green stem up into the air, and a little white root down into the shallow bed of earth. But you would have been surprised to see how much the root found to feed upon in only a handful of dirt.

Yes, indeed! And it sucked and sucked away with its little hungry mouths, till the pale-green stem became a small brown tree, and the roots grew tough and hard.

So, after a great many years, there stood a tall tree as big around as your body, growing right upon a large rock, with its big roots striking into the ground on all sides of the rock, like a queer sort of wooden cage.

Now, I do not believe there was ever a boy in this world who tried as hard to grow into a wise, or a rich, or a good man, as this birch seed did to grow into a tree, that did not become what he wished to be. And I don't think anybody who hears the story of the birch tree, growing in the woods of Wendell, need ever give up to any sort of difficulty in his way, and say, "I can't." Only try as hard as the tree did, and you can do everything.

—FRANCIS LEE.

The Shower

Th' rainbarrel fills and overflows,
An' th' water runs in frothy streams;
Th' drops stand thick on bud an' rose,
An' th' old' slate barn roof shines an' gleams;
Th' rooster drops his tail an' runs
For th' carriage shed, an' th' limbs hang low.
Th' thunder roars like far-off guns,
An' it's fresh an' green down th' long corn row.

An' it's drip, drip, drip from th' ridge an' eaves;
It's dash, dash, dash on th' window-pane;
It's swish, swish, swish in the ellow leaves,
An' it's splash, splash, splash down th' muddy lane;
Th' cows low soft in th' milkin' shed,
An' th' plow horse steams where a nearby limb
Spreads out its leaves above his head
To keep the rain-drops off'n him.



For the Blackboard.

An' ol' Doc Griggs goes tearin' past,
A-splash, splash, splash with his big red roan,
T' beat the stork or to put a cast
On a broken leg or t' splint a bone;
Or p'raps Dad Sykes is tuck ag'in
With his pleurisy or an azmy spell,
W'ich Doc can knock with a pint o' gin
An' some epecac an' some calomel.

An' it's grease my boots so they won't shrink tight,
An' it's read my *Times* an' let her come,
For th' corn jist jumps when th' weather's right,
An' I'm glad I ain't Doc Griggs, by gum,
With his muddy wheels an' his big, red roan
An' his epecac an' his calomel,
An' I'm glad it ain't my broken bone
Or my pleurisy or my azmy spell.

—J. W. FOLEY, in the *New York Times*.

Elm Blossom

The bloom of the elm is falling,
Falling hour by hour,
On the buds and the golden blossoms,
That are badges of spring's sweet
power;
On the white throat, little builder,
That, as he buildeth sings;
On the chattering, glittering starling;
And on the swallow's wings.

The bloom of the elm is falling
Upon the passing bee;
And on the rosy clusters
That stud the apple-tree;
On the sloping roof's brown thatch-
ing;
And on the springing grass;
On the dappled, meek-eyed cattle;
On lover and on lass.

With the rain and with the snow-
flakes
The angel of the year
Comes, with his swift wings glancing,
Bringing us hope or fear;
Now dying leaves, now blossoms,
He scatters o'er the land:
In storms and in the sunshine,
I've seen his beckoning hand.

—Hours at Home.

Grammar School Course in Literature

By HARRIET E. PEET, State Normal School, Salem, Mass.

An Outline for the Study of Sohrab and Rustum

Matthew Arnold's "Sohrab and Rustum" is an episode taken from a Persian story. It is written in such simple, clear English and with such keen appreciation of heroism that it has all the dignity, force and beauty of a true epic. It is like a bit of exquisitely sad, heroic and religious music; it stirs the emotions and leaves the heart filled with compassion for those whom "fate overrules." There is no sentimentality about the story, no abstract thought, no emotions beyond the comprehension of a sixth-grade pupil. It is, for these reasons, an excellent thing to study in the last years of the grammar school.

The story tells how the Tartar hero Sohrab seeks his father Rustum, and how they meet, unknown to each other, on the battlefield in single combat. Rustum is in disguise and does not know that he has a son. Years before Sohrab's mother had feared her warrior husband would make a soldier of her son, so she had sent word to the father that their child was a girl. In spite of the mother's care her child grew into a warrior. As Sohrab carried the "Tartar ensign" in the battlefield his heart was filled more and more with one desire,—he fondly hoped to find the father whom he had never known.

At the beginning of Matthew Arnold's story, Sohrab challenges the Persian hosts, that he, thru a single combat, may win such renown that his father, Rustum, will hear of him. Rustum, unaware of the consequences, answers the challenge. The two meet on the battlefield. A strange feeling of kinship overpowers them and both are loathe to fight, but fate overrules. They fight. Neither gains an advantage until Rustum, in anger, shouts his name. This unnerves Sohrab. His shield falls and he is fatally wounded. As he dies he shows Rustum the seal pricked upon his arm by his mother, and tells how great her grief will be. Then Rustum knows that he has killed his only son.

The following outline is adapted to seventh and eighth year pupils and with some simplification to the sixth grade. It aims to cultivate in the children the habit of thinking and feeling as they read, to give them power in the use of language, to aid them in reading interpretively, but more than all of these, to develop in them broader humanity thru the appreciation of good literature.

The work as outlined below begins with an introduction and ends with summarizing exercises so that the parts of the poem may be held perspective and the selection be regarded as a unit. The work between the introduction and the summary is centered about the eight incidents of the epic. The exercises on each of the incidents are of five kinds. First there is a preparation for study. At the end of each recitation the teacher and pupils go over the advance text together, selecting topics for talks and clearing up all difficulties of the text. This exercise is valuable in teaching the children how to study. The second exercise on each incident consists of an outline of work for a study period. This is also important, for no pupils can gain independence without being thrown upon their own responsibilities and

made to work unaided. The third division of work consists of the topic recitations, which may be given by the pupils at the beginning of a recitation. It is thru this exercise that the children gain power in the use of language. The fourth step, class discussions, affords opportunity to make the study of value ethically and to develop in the children some of the rudiments of literary criticism. The fifth exercise is the one for which the others all prepare, oral reading.

The incidents are planned for one lesson apiece. When two are required one should be allowed for the topic reports, memory work and class discussion, and the other for reading and preparation for study. If a class has not won independence in study it may be necessary to divide the work on each incident into three parts. If this is necessary the division would fall in this way: Lesson one—Topic reports, memory work and class discussion. Lesson two—Oral reading. Lesson three—Careful study of text of advance section. The work should be crowded sufficiently so that it is entirely finished before the enthusiasm of the class begins to wane. A six weeks' limit is a good one.

No outline can be followed literally. The mood and ability of a class must determine so much of the work that a teacher must be able to turn from her plan and meet what the moment demands. The most that this outline hopes to do is to be suggestive.

INTRODUCTION

(1) Description of the geographical setting of the story: the Aral sea; the sluggish Oxus; the sandy plains; the sparsely settled region to the north; "high Pamere."

(2) Reading of the story by the teacher to the point where father and son meet, lines 1 to 303.

(3) Discussion with the class of the relation of Sohrab and Rustum and how it might have happened that they were unknown to each other.

First Incident—Sohrab's Request

1. Class to study: (a) The setting of the incident,—“What a soldier might have seen as he looked out from his tent over the battlefield in the early morning”; (b) The character of Sohrab,—“Why Sohrab was regarded as a hero by the Tartars”; (c) Sohrab's request; (d) Peran-Wisa's regard for Sohrab, and his answer to the request,—“What showed Peran-Wisa loved Sohrab? Why did he grant his request?”

2. Each child is to make a report during the recitation period on one of the topics, which he has chosen from the following list. These reports are to be well-organized, brief talks on such subjects as: In the Tartar Army at Daybreak; The Young Tartar Hero; Sohrab's One Wish; Peran-Wisa's Regard for Sohrab. These talks should be as simple and brief as the following:

IN THE TARTAR CAMP AT DAYBREAK

An early morning fog half hides a Tartar camp pitched upon the sandy plain of Oxus. All is quiet except for a figure of a young warrior clad in a war cloak who comes from out his tent into the cool dampness, and silently passes among the quarters of the sleeping soldiers until he reaches

a tent larger than the others and set somewhat apart. This he enters.

THE TARTAR HERO

Sohrab was the hero of the Tartar army. He was as brave as a lion and as swift as a deer. He was but a boy in years, and yet he had fought in many battles, and in them all carried the ensign of the Tartars forward and beaten the Persians back.

3. Class Discussion: As the third part of the study of this incident the teacher must see that certain facts are grasped by all the children: namely, Sohrab is a Tartar, fighting for the Tartars under Peran-Wisa. He is fighting in order to win a name for himself which will help him to find his father. Rustum, his father, whom he has never seen, is a Persian, who apparently is no longer as active as in the days of his great renown.

4. Oral Reading: The fourth part of the study of this section should be oral reading by the class of the entire incident,—lines 1 to 94. In the reading the children should try to show how strongly Sohrab desires to find his father, and how much beloved he is by Peran-Wisa. It is a dramatic scene and offers an opportunity for a good reading drill if the class, thru the oral reports, have grasped both the thought and mood of the incident.

5. Preparation for the study of the second incident: In this the teacher helps the children to find their topics upon which to study and report. Questions are asked where the text is not understood.

The Second Incident—The Challenge

LINES 94—187

1. Class to study:

- a Contrasting appearance of the two armies: the Tartars, unkempt, wild, various; the Persians, well-ordered, "Bright in burnished steel."
- b The ceremony of the challenge: The Tartar leader winds his way thru his squadrons and checks his foremost ranks; Ferood, the leader of the Persians, checks his ranks and comes forward to hear the challenge. The challenge is given.
- c The attitude of the two armies over the challenge.
- d The Persian Council and the answer to the challenge.

2. Children's Reports: The Muster of the Troops; The Challenge; The Council.

3. Details to be straightened out in the minds of the children; the names of the leaders on the Persian side. The two sides made distinct. Tartars: Peran-Wisa, Haman, Sohrab, Afrasiab; Persians: Rustum, Ferood, Gudurz, King Kai Khosroo. Aid to be given children in interpretation of similes: The Tartar army streaming forth like the cranes over Cashin and the Aralian estuaries; the Tartar army receiving a thrill of joy similar to a shiver thru a field of grain on a bright sunny day; the Persians receiving the news of the challenge like travelers on a dangerous mountain pass.

4. Reading only of the section embraced between lines 141 to 187, "But Peran-Wisa, with his herald, came, . . . Let Sohrab arm, and we will find a man." Special attention should be given to the martial element in this section. The challenge, for example, should be read in an even, sustained voice with the words prolonged, as if they were to be heard at a distance:

"Ferood, and ye, Persians and Tartars, hear!
Let there be truce between the hosts to-day,

But choose a champion from the Persian lords
To fight our Champion Sohrab, man to man."

5. Preparation for study or third incident: glancing thru lines 187 to 291 for pupils to discover topics and to ask for explanations of parts hard to understand.

Third Incident—In Rustum's Tents

1. Pupils to discover thru study of the text: (a) What was strange about Rustum's occupation the morning of the preparation for battle; (b) the reason why Rustum was not fighting; (c) the manner by which Gudurz persuades him to take up the challenge; (d) Rustum's preparation for battle; (e) Ruksh, the horse.

2. Reports: Rustum at his morning meal; Gudurz and Rustum; The Preparation for Battle.

3. Points to be impressed upon children: Rustum goes in disguise to the battle; the fact that he does not know that he had a son, but that he wishes that such a young man as Sohrab were his son; interpretation of simile: "And dear as the wet dives to the eyes, etc."

4. Reading of entire incident. Attention should be called to Rustum's cordial soldierly ways, his pride in his reputation, his sorrow over the fact that he has no son, so that the reading may express these things, and be, therefore, interpretive.

BETWEEN THIRD AND FOURTH INCIDENTS—COMPOSITION STUDY

The lesson before the combat offers an excellent opportunity for a comparison of the two heroes, Sohrab and Rustum, and for a prediction of the end of the story. These subjects are suitable for written work. The written work should be preceded by class discussions so that when the children come to write they have some idea of what they would like to say. An author must experiment with his material and watch the effect much as an artist does with color. For this reason it is well to let the children experiment with original similes in the compositions on Sohrab and Rustum. If this is done first as a class exercise, the children will see what ones are appropriate and what are absurd, awkward or foolish.

Fourth Incident—Father and Son Meet

LINES 291-398

1. Study: (a) memorizing a simile from parts read; (b) arrangement of army; (c) Rustum's first impression of Sohrab; (d) Rustum's warning; (e) Sohrab's belief that he has found his father; (f) Rustum's suspicion and taunt; (g) Sohrab's reply.

2. Reports: Signs of Kinship; An Evil Suspicion; Why Sohrab felt Confident.

3. Discussion: Possibility of near relatives recognizing each other when unknown to one another; Interpretation of simile.

4. Reading of incident.

5. Choosing of topics in the fifth incident.

Fifth Incident—The Combat

LINES 398-525

1. Study (a) to find order of events in the combat: First strokes are taken; Rustum falls; Sohrab desires to give up the battle; Rustum is angry; second strokes are taken; Rustum's plume is defiled; Rustum shouts his name; Sohrab is unnerved by name and falls wounded. Study (b) to get a definite idea of some one part of battle; (c) to interpret and memorize a simile.

2. Reports: Abstract of the story of the Com-

bat; An Incident in the Combat; An Interpretation of a Simile.

3. Discussion: At what points did fate determine the battle? What advantages over the other had each hero in the combat? Where did the blame lay for the fatal outcome of the duel?

4. Reading: Entire incident.

5. Preparation for Study: The selection of topics for advance lesson.

Sixth Incident—The Revelation of Son to Father

LINES 527-689

1. Study: (a) to find why Rustum did not recognize Sohrab as his son; (b) how Sohrab proved he was Rustum's son, first by the story of his mother and second by showing the seal pricked upon his arm; (c) interpret similes,—“A breeding eagle sitting in her nest,” “At dawn the shepherd from his mountain-lodge descries,” “A fragrant tower of purple bloom.”

2. Reports: Sohrab's Grief for His Mother; Rustum's Memories; The Seal; Interpretation of Similes.

3. Discussion: How did Sohrab show his nobility after he was wounded? What is the saddest thing in this part of the story?

4. Reading: The entire incident.

5. Glancing thru the text of the seventh incident to discover topics and to ask for aid with difficult passages.

Seventh Incident—Rustum's Grief

LINES 689-827

1. Study: (a) How Rustum showed his grief; (b) Sohrab's words of comfort to his father; (c) Sohrab's words to Ruksh; (d) Sohrab's wishes for his own burial; (e) Sohrab's thought for his men; (f) Rustum's promises and his grief.

2. Reports: Rustum's Grief; Ruksh, the Horse; Sohrab's Thoughts for Others.

3. Discussion: What were the hardest things which Rustum had to bear? What was the most noble thing said or done by Sohrab?

4. Reading: Entire incident.

Eighth Incident—The Death of Sohrab

LINES 827-893

1. Study: (a) how Rustum mourned for Sohrab; (b) the dispersion of the armies.

2. Discussion: What things are shown by the story taken entire? What is the point to the story? How does the story help people?

3. Reading: Entire incident.

SUMMARIZING WORK

1. Discussion and then writing upon favorite scenes in the story.

2. Favorite similes interpreted, memorized and illustrated in water-colors.

3. Class composition; a review of Sohrab and Rustum. Paragraph outline (1) What is the poem about? (2) What are the main events in the story? (3) How do the characters compare?

4. Individual compositions; (subject) Why I like the story of Sohrab and Rustum; (titles) A Persian Story; A Brave Hero; Sohrab and Rustum.

5. Memorizing a chosen section of the postlude.

And night came down over the solemn waste,
And the two gazing hosts, and that sole air,
And darken'd all; and a cold fog, with night,
Crept from the Oxus. Soon a hum arose,
As of a great assembly loos'd, and fires
Began to twinkle thru the fog; for now
Both armies mov'd to camp, and took their meal:
The Persians took it on the open sands
Southward, the Tartars by the river marge:
And Rustum and his son were left alone.
But the majestic river floated on,
Out of the mist and hum of that low land,
Into the frosty starlight, and there mov'd,
Rejoicing, thru the hush'd Chorsmian waste,
Under the solitary moon: he flow'd
Right for the polar star, past Orgunje,
Brimming, and bright, and large; then sands begin
To hem his watery march, and dam his streams,
And split his currents, that for many a league
The shorn and parcell'd Oxus strains along
Thru beds of sand and matted rushy isles;
Oxus, forgetting the bright speed he had
In his high mountain-cradle in Pamere,
A foil'd circuitous wanderer: till at last
The long'd-for dash of waves is heard, and wide
His luminous home of waters opens, bright
And tranquil, from whose floor the new-bath'd stars
Emerge, and shine upon the Aral Sea.

Our Willows

It is when the east wind blows,
And his cohorts gather and ride,
That the willows before my window
Show me their silver side.

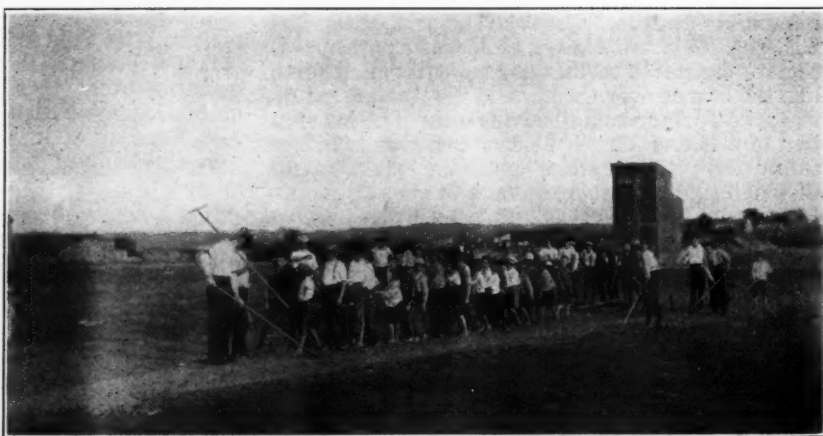
When the air is sweet and still,
And all heaven beams light and mirth,
Tho their green boughs quiver and sparkle,
They look and lean to earth.

But the moment the storm-wind blows,
And the storm-clouds gather and ride,
They lift up their branches to heaven,
And show me the silver side.

'Tis not to fear and sadness,
They owe that silver sheen;
Unseen, in calm and gladness,
It underlies the green.

And when the North-west triumphs,
And baffled storm-clouds flee,
They fling out their silvery streamers,
And hail the VICTORY.

—Hours at Home.



Children Making a Running Track at the Rosedale Playground, Washington, D. C.
Courtesy of Dr. Henry S. Curtis, Supervisor of Washington Playgrounds.

Events of the Year 1908 in Outline--III

By MAUD ELMA KINGSLEY, Maine

Island Possessions of the United States

Note.—In the island possessions of the United States, the year has been uneventful.

1. Hawaii asks for no change in existing conditions beyond relief from the navigation laws which prevent foreign vessels from engaging in the carrying trade between the islands and the mainland of the United States.
2. The Porto Ricans ask American citizenship and the recognition of the island as a territory, not a dependency, of the United States.

(This would merely put Porto Rico and Hawaii on the same plane.)

3. The Philippines.
 - a. The leaders of political opinion among the Christian races still present their claim to immediate and absolute independence; and the Philippine Assembly, which is controlled by them, has, ever since its formation, performed very skilfully the part of a parliamentary opposition to the American Government, which retains the veto power over its proceedings.
 - (1) There is, however, much evidence that the eagerness of these men to get rid of the Americans is on the wane. All of them are "smart"; many of them are sincere patriots; and they are beginning to realize that the United States has done, and can still do, much to benefit the islands, politically as well as materially, and that so long as the Filipinos can come into the court of American public opinion with clean hands, they need fear no gross injustice nor oppression.
 - (2) A delegate from the islands, permanently resident in Washington, will henceforth act as a connecting link between American and Filipino politics.

Cuba

1. The American occupation of Cuba is to terminate soon after the beginning of the New Year.
2. The election held in November resulted in the choice for President of the Republic of a man who, when the Americans intervened, was under arrest for a revolutionary attempt; but all parties in the island profess to believe that the principle of majority rule, as practised in the United States, is now understood and appreciated by the Cubans.

The Republic of Panama

1. In the Republic of Panama, also, the influence of the United States was exerted to secure a fair election, which resulted in a change of party government.
2. The interest of the United States in Panama is such that the American Government cannot tolerate revolutionary outbreaks there or the peculiar notions of tenure of office which give rise to the revolutionary idea.
3. Work on the great canal has been vigorously prosecuted and with such success that the

estimate of time required for its completion has been officially shortened.

Foreign Interests

(Little that is noteworthy has occurred in the foreign relations of the United States.)

THE AMERICAN BATTLESHIP FLEET

1. The American Battleship Fleet, on a practice cruise around the world, has touched at several ports in South America, crossed the Pacific to Australia, and visited Japan and China. Everywhere its appearance has been made the occasion for a display of the most friendly sentiments toward the United States, far beyond the requirements of ordinary diplomatic courtesy.
2. Early in the coming year, the cruise will be continued home thru the Mediterranean Sea.

RELATIONS WITH THE SOUTH AMERICAN REPUBLICS

1. In common with nearly all the great powers, the United States has been compelled to break off direct diplomatic relations with the Republic of Venezuela, owing to the failure of the Venezuelan President, Castro, to comply with diplomatic custom in the consideration of claims of American citizens against his government.
 - a. This incident brings home to the American people the fact that Venezuela is defying the world, relying on the fact that her territory, which is all she has to lose, is practically protected against invasion by the United States under the Monroe Doctrine. (Doubtless many of the claims which are being thrust on the attention of President Castro, from all quarters, are unjust; but he is making no effort at adjustment or compromise.)
2. How to protect the smaller and more backward of the American Republics against European aggression, without upholding them in wrongdoing and without impairing their responsibility as sovereign states, is a puzzling problem for American diplomacy.
 - a. In dealing with this problem, however, the United States is, at present, unhampered by European jealousy or by the suspicion and distrust of the more important Latin-American States.

One More Lincoln Story

Abraham Lincoln, before he was elected to the Presidency, in response to an inquiry as to the financial standing of a neighbor, wrote a letter as follows:

"Yours of the 10th instant received. I am well acquainted with Mr. ——— and know his circumstances. First of all, he has a wife and baby; together they ought to be worth \$50,000 to any man. Secondly, he has an office in which there is a table worth \$1.50, and three chairs worth, say, \$1. Last of all, there is in one corner a large rat-hole that will bear looking into.

"Respectfully yours,

"A. LINCOLN."

Geography--Industrial and Commercial

The Samovar in Russia

One of the great industries of Russia, says Consul James W. Ragsdale, of St. Petersburg, is the manufacture of household utensils from brass, nickel, copper, and copper alloys. Kettles, pots, pans, and bowls of every conceivable kind and shape are made and sold by the thousands. The most interesting utensil, and the one of most frequent use in the Russian home, is what is known as the samovar, or hot-water urn. Every house, however humble, has one or more, and they are in constant use. The Russian breakfast is tea and rolls, sometimes with butter and jam added. A fire in the kitchen stove before luncheon time is the exception, hence the popularity of the samovar. These are made in the most beautiful shapes and designs, and have capacity for heating from 12 to 30 glasses of water for private homes, and from 1 to 5 gallons for hotel purposes.

The samovar industry first began about sixty years ago, and has gradually developed until now the annual output averages in value about \$2,575,000, and gives employment to many thousands of men, women, and children. In the manufacture of these vessels, until recently, only the lower part, or what is called the podden, or stand, the faucet and handles, were molded, all the remaining parts, namely, the body, the neck that joins it to the stand, the interior pipe, the charcoal tube, and the water compartment were welded out of sheet latten, or thin plates of copper, and the requisite form was given to them by means of hammering.

Recently, however, a new method of manufacturing the lid direct from the sheet by means of pressing it into a form attached to the rotating spindle of a lathe, and by using a special instrument called devilnik, has been introduced. Under this invention it is possible to manufacture all the parts by machinery. The central tube, whence the heat emanates (being filled with burning charcoal), is either cast or hand-forged from brass. The most beautiful of these urns are made from pinchbeck, an alloy of copper and zinc, which gives the vessel a beautiful golden appearance. Many are made from nickel or nickel plate, while others are heavily plated with silver. Those most in use, however, are made from brass and copper. The prices range anywhere from \$3.75 to \$80.

Blueberries in Nova Scotia

Consul Alfred J. Fleming furnishes the following report on the cultivation of blueberries in Nova Scotia, and their shipment from Yarmouth:

In addition to thousands of dollars' worth of fish, dried, canned, pickled, and fresh, and the vast quantities of lobsters and lumber products, with 10,000 or 20,000 barrels of apples every year, all of which are exported to the United States from this port, there is one item of no mean proportions, and that is blueberries. These berries are wild here and very abundant. The season really began July 18, and practically closed September 28, extending a trifle over two months, and during that time, by official returns received from the Yarmouth customs office, there were exported from this part the enormous quantity of 24,210 crates of blueberries, and these were worth, as given by the same authority, the handsome

sum of \$53,806. In other words, as most of these berries went to Boston, \$53,806 of Boston money found its way back to Nova Scotia and practically the Yarmouth territory. As these shipments were all in small lots, under \$100 each, no consular services were needed. It is said that last year was the banner year, the yield being very large and the berry of a very superior quality and flavor. The amount of money stated found its way into the pockets of the poor people.

Black Fox Industry

Consul John H. Sherley, of Charlottetown, in sending the following report, says that as strangers are not allowed on or about the fox farms it is impossible to secure any very definite information concerning the industry.

"There are three black fox farms near Atherton where these animals are raised for their skins. These farms contain 20, 25, and 30 foxes, respectively. The skins are sold in London at prices ranging from \$500 to \$1,800 each, according to quality. I am informed that the fur is used for ornamenting the cloaks of royalty, as it is the only fur to which gold will cling.

"The farm containing 30 foxes is on Cherry's Island. The farm containing 20 foxes is in a rough, broken woods country, where the animals are confined by heavy woven-wire netting. The wire is set in the ground two and three feet, in order to keep the foxes from burrowing under, and is about eight feet high above ground, with a curve inwardly at the top of each post of another three or four feet of wire, in order to keep them from climbing over the fence. They sleep in the open the year round, in hollow trees and in hollow logs. These animals are not crossbred, but are confined to their own kind, to keep the fur of the best quality possible. They are fed principally on oats and milk and bread and milk, with a small quantity of cooked meat once a day, at noon, the amount of meat being lessened during the summer, as it has been shown that too much meat creates mange, diseased scalps, etc. These animals are very wild, and no one can get near them except the keeper, and he only when he brings them food."

Ferns Preserve Food

Consul-General Richard Guenther, of Frankfurt, advises that a newspaper of that German city states that the fern plant, which grows almost everywhere, is an excellent preservative for packing articles of food, fruit, etc. A summary of the article follows:

People who have lived in England know that the English have used it successfully for many years. Valuable fruit, fresh butter, etc., are no longer seen in the English markets packed in grapevine leaves, but almost always in fresh fern leaves, which keep the articles excellently. This is done where grapevine leaves are to be had in abundance.

On the Isle of Man fresh herrings are packed in ferns and arrive on the market in as fresh a condition as when they were shipped. Potatoes packed in ferns keep many months longer than others packed only in straw. Experiments made with both straw and fern leaves in the same cellar showed surprising results in favor of ferns. While

the potatoes packed in straw mostly showed signs of rotting in the spring, those in ferns were as fresh as if they had just been dug.

Fresh meat is also well preserved by fern leaves. It would seem as if the highly preservative qualities of fern leaves are due to their high percentage of salt. No larvæ, maggots, etc., approach ferns, as the strong odor keeps them away.

Life in Tahiti

The following report concerning the inhabitants of the Society Islands and their advanced social condition has been received from Consul Julius D. Dreher, of Tahiti:

Of the total population of the Society Islands and dependencies, composing the French colony of Tahiti, numbering 31,000, more than 27,000 are of the native race, a fine type of Polynesians; about 2,200 are French, and about 1,500 are of fourteen other nationalities, mainly British, Chinese, and Americans, ranking numerically in the order named. Nearly two-thirds of the population live in the Society Islands, the group most advanced in civilization. Notwithstanding the fact that the hundred islands composing the colony are scattered over an area of the South Seas extending 1,300 miles from north to south and 1,600 miles from east to west, the inhabitants of most of them have had more or less contact with civilized people for a century. Various denominations have churches in the principal settlements in the larger islands.

The town of Papute, which is the seat of the colonial government and the commercial center of the colony, has a population of nearly 4,000. Here are large wholesale and retail stores, two banks, several hotels, four schools, five churches, a free library of French books, a good hospital, a philharmonic society, two social clubs, a chamber of commerce, a telephone system, and a semaphore station. The streets are swept and the rubbish hauled off every week day. The water system is abundantly supplied from a pure mountain stream. The market, which is under the supervision of a food inspector, is supplied with fresh meats and a great variety of fish, vegetables, and fruits (including nuts, about forty kinds of fruit grow in Tahiti). Bread, milk, and ice are delivered by carts daily.

USE OF MODERN UTILITIES

Bicycles are common, and there are a few automobiles, for which the good roads kept up by the government are well adapted. There are letter-carriers in town and a daily mail throughout the island of Tahiti. Foreign mails arrive every twenty-eight days from Auckland and every thirty-six days from San Francisco. Besides the government establishment, there are three other small printing offices in Papute. With the exception of the small sheets published by the missionaries, there is only one paper published here, the *Official Journal*, which is devoted mainly to official matters and announcements of all sorts.

The climate of Tahiti, tho warm, is healthful. The mercury seldom goes higher than 90 deg. or lower than 65 deg. F., except in the mountains, which rise to the height of about 7,000 feet.

Owing to freight rates and customs duties, almost all imported articles of food, including flour, bacon, lard, and canned meats, salmon, butter, vegetables, and fruits, cost from 50 to 75 per cent. more in Tahiti than in the United States. In the market prices are as follows; Beef, from 20 to

28 cents a pound; mutton, 20 to 30 cents; pork, 15 to 18 cents; chickens (small), 30 to 50 cents each; turkeys, \$2 to \$5 each; eggs, 35 to 55 cents a dozen (eggs are imported at times from San Francisco); milk, 10 cents a quart; canned butter in stores, 39 cents a pound (no fresh butter in market); potatoes, 50 cents a peck. Fish, tho plentiful in the sea, are dear in market. Vegetables, grown by Chinamen, are cheap, and so are fruits, which grow almost without cultivation. Living, on the whole, costs about 50 per cent. more here than in the United States.

Distances

FROM NEW YORK TO PRINCIPAL CITIES OF THE U. S.

Atlanta, Ga., 876.	Milwaukee, Wis., 997.
Baltimore, Md., 188.	Minneapolis, Minn., 1,332.
Bismarck, N. D., 1,767.	Mobile, Ala., 1,231.
Boston, Mass., 235.	New Orleans, La., 1,372.
Buffalo, N. Y., 442.	Norfolk, Va., 347.
Charleston, S. C., 739.	Ogden, Utah, 2,405.
Chattanooga, Tenn., 847.	Oklahoma, Okla., 1,608.
Chicago, Ill., 912.	Omaha, Neb., 1,405.
Cincinnati, Ohio, 757.	Philadelphia, Pa., 91.
Cleveland, Ohio, 584.	Pittsburg, Pa., 444.
Columbus, Ohio, 637.	Port Townsend, Wash., 3,199.
Dallas, Tex., 1,769.	Portland, Me., 350.
Denver, Colo., 1,930.	Portland, Oregon, 3,204.
Detroit, Mich., 693.	Salt Lake City, Utah, 2,442.
Duluth, Minn., 1,391.	San Antonio, Tex., 1,943.
El Paso, Tex., 2,310.	San Diego, Cal., 3,231.
Galveston, Tex., 1,782.	San Francisco, Cal., 3,191.
Helena, Mont., 2,452.	Sante Fe, N. Mex., 2,211.
Indianapolis, Ind., 825.	Sault Ste. Marie, Mich., 1,036.
Jacksonville, Fla., 933.	Savannah, Ga., 845.
Kansas City, Mo., 1,342.	Seattle, Wash., 3,151.
Key West, Fla., 1,454.	Sioux City, Iowa, 1,422.
Little Rock, Ark., 1,290.	St. Paul, Minn., 1,322.
Los Angeles, Cal., 3,149.	St. Louis, Mo., 1,065.
Louisville, Ky., 871.	Tacoma, Wash., 3,199.
Memphis, Tenn., 1,157.	Toledo, Ohio, 705.
	Washington, D. C., 228.

Agreeable Arctic Temperatures

According to eminent arctic explorers, physical sensations are relative, and the mere enumeration of so many degrees of heat or cold gives no idea of their effect upon the system, says the *Chicago Record-Herald*.

One explorer states that he should have frozen at home in England in a temperature that he found very comfortable indeed in Lapland, with his solid diet of meat and butter and his garments of reindeer.

The following is a correct scale of the physical effect of cold, calculated for the latitude of 65 to 70 degrees north:

Fifteen degrees above zero — unpleasantly warm.

Zero—mild and agreeable.

Ten degrees below zero—pleasantly fresh and bracing.

Twenty degrees below zero—sharp, but not severely cold. One must keep one's fingers and toes in motion and rub one's nose occasionally.

Thirty degrees below zero—very cold. Particular care must be taken of the nose and extremities. Plenty of the fattest food must be eaten.

Forty degrees below zero—intensely cold. One must keep awake at all hazards, muffle up to the eyes and test the circulation frequently, that it may not stop somewhere before one knows it.

Fifty degrees below zero—a struggle for life.



In the Himalayas—"Where Time Is No More."

Courtesy of Remington Typewriter Co.

Pupils' Work in Fifth Grade Geography

The papers and illustration given below were sent to THE SCHOOL JOURNAL by Miss Rebecca Faddis, of the State Normal School at New Paltz, N. Y. This is considered one of the most progressive normal schools in the country and the material as worked out by pupils of the fifth grade is certain to be of use elsewhere.

OUR SCENE OF SWITZERLAND

We have been building a part of Switzerland. It is northeast of Italy. We have found that it is the most mountainous country of Europe, but it is very small. It is sometimes called the playground of Europe.

Switzerland is quite a pretty little country to build upon the sand table. I cut out some animals for the village and some for the mountains. Some of the boys made houses. One of them made a Swiss well. One of the cattle is drinking out of it.

ETHEL STARR, age 10 years.

ABOUT SWITZERLAND

We have been studying about the country of Switzerland and built a little scene of it.

We found that the Matterhorn is the highest mountain in Switzerland. I brought the sand for the Matterhorn and helped build it up.

The houses in Switzerland are very small, and also the farms are small and are worked by hand.

In the spring the people take their stock to pasture up on the mountain sides, and do not bring them back until fall.

We have very beautiful pictures of things in Switzerland. We have pic-

tures of the houses with stones on the roofs so the wind cannot blow the roofs off.

We show one village and the Matterhorn. We made it look as near like the mountain as we could.

—PETER DRAKE.

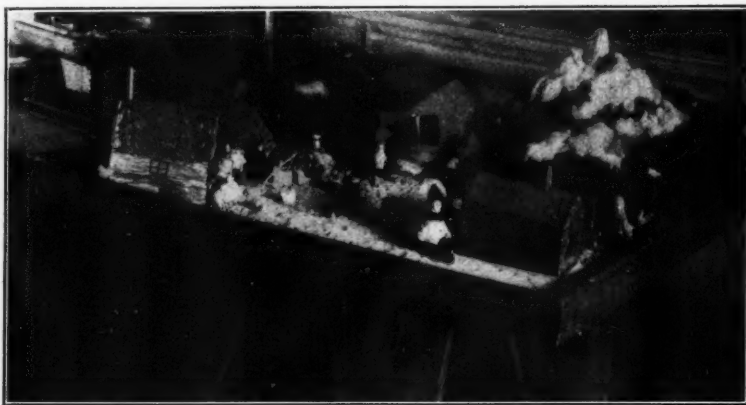
SWITZERLAND

We have just finished Switzerland, which seems to be a very clean and busy little country.

The country is noted for manufacturing and trading. Many of the factories are run by water power, and the water is obtained from the rapid streams. Woolens, silks and cotton goods are manufactured near Zurich. Fine clocks and watches are made at Geneva. A very useful thing to this country is the breeding of the silk worm, which is carried on in the Alps.

Switzerland is noted for its cheese and butter.

Since Switzerland is such an interesting little country we made a picture of it, showing houses, cattle, and dolls dressed to represent the people.—ANNA CAHILL.



Constructive Work Done in Fifth Grade Geography

Natural Resources of the United States--II

The Oil Fields of America

By SUPT. G. B. COFFMAN, Illinois

Oil is found from 300 to 2,000 feet below the surface of the ground. It occurs in certain kinds of porous rock, usually sandstone. The oil is brought to the surface by means of an oil well, one foot in diameter at the top and six inches at the bottom, thru which the oil is pumped. This hole is dug by means of a steel drill. The fittings of this drill often weigh a ton and by means of impact the rock is crushed and removed by means of a sand pump. When the oil rock is reached, if the pressure is great, the oil will come with a rush, but often the well must be "shot," that is by exploding a charge of nitro-glycerine at the bottom of the well. This breaks the rock and causes the oil to flow. It takes about 200 quarts of nitro-glycerine. This is placed at the bottom of the well and then the well is filled, for about 200 feet, with water to "tamp" the charge. After the discharge the well is lined with iron piping and connected to a receiving tank. A pump is added and connected with a gas engine and if gas is obtained from the well it is used to run the engine. Thus the well does its own pumping.

There are about ten thousand square miles of territory in the United States where oil is found. In the short period of fifty years, or since oil was found, there have been taken almost two billion barrels from the earth. New fields are being discovered every year. The principal oil fields are: The Appalachian Fields, The Lima - Indiana Fields, The Illinois Fields, The Mid-Continent Fields and the Gulf Fields. However, oil is found in many of the Western states.

The Appalachian Field extends from western New York to Tennessee. It crosses western Pennsylvania and south across West Virginia, and a short distance in to Ohio. Farther south oil is found in Kentucky and Tennessee. The birth-place of this industry was in Pennsylvania, but the supply is now about exhausted there. Only about one-third the oil is produced that was produced fifteen years ago. The oil from this section is different from all the other fields. It can be converted into an oil for lamps much easier than other oils. This lamp oil is much better than the lamp oil from other fields, except Ohio and Indiana Fields.

The Lima-Indiana Field takes in northern Ohio and eastern Indiana. The oil from this field contains less gasoline and less lamp oil. It has a small per cent of sulphur in it which is hard to extract. It is more uniform than the Pennsylvania oil.

The Illinois Field is just west of the Indiana line. It is a strip about thirty miles long and six miles wide. It centers around Robinson, the county seat of Crawford county. This field is yielding an enormous quantity of oil. It does not have much sulphur in it, but contains a little asphalt.

The Mid-Continent Fields comprise the pools in Kansas, Oklahoma and northern Louisiana. This field is yielding a flood of oil. The question seems to be, how to use it.

The Gulf Fields are found in southern Louisiana and Texas. This is a black asphaltic oil and is now on the decline. It was discovered about eight years ago. Just this year oil has been discovered in the northwestern part of Louisiana at Caddo. This is a great field and is a better oil than found in the other parts of the state. It is accompanied by the largest supply of natural gas known in the world.

Oil is found at many places between Los Angeles and San Francisco. This oil has no sulphur and is a boon to that part of the country because fuel is scarce. There are also some pools in Colorado and Wyoming. There are prospects in several other Western states, and in the near future no doubt there will be much oil discovered in these Western states.

The industry of oil began when the lamp with a glass chimney was invented by Kier and Ferris. This made the oil give a steady, bright light. The demand was so great that the Drake well at Titusville, Pa., was drilled.* This was in 1859. From this time to the present, the demand has kept pace with the production. It is true that some of the older fields are decreasing in their production, but the new discovery has more than kept pace with this decrease and the production has gradually increased. In 1860 there were 600,000 barrels produced; in 1907 there were 166,000,000 produced. Almost as much oil is produced as milk.

There are more than 82,000 wells in these fields. They are worth \$150,000,000. Besides this there were spent more than \$100,000,000 on failures. It takes 45,000 men to operate the wells, and their wages amount to \$40,000,000. It has cost \$60,000,000 for trunk pipe lines thru which the oil is pumped to all parts of the country. \$23,000,000 has been spent for steel tankage to hold the oil. Also 20,000 tank cars are in use.

This crude oil or petroleum must be refined before it can be used. It is this that the Standard Oil Company is mostly engaged in. The crude oil is pumped to the refineries, or it may be tanked in tank cars. In late years there has been a rapid development of the refining plants of this country. This had to be done, or ship the crude oil to foreign countries. The growth has increased till the refining capacity has a plant worth \$12,000,000 for land, \$15,000,000 for buildings and \$75,000,000 for apparatus. They have pipe lines, tank cars, tank wagons, and a fleet of over 500 vessels for the foreign trade. This gives employment to about 20,000 men.

We are now producing more oil than Russia. On account of the prevailing laws in that country, Russian industry of oil cannot be perfected. They have no such system of transportation and refinery as we have. They do not produce the oil as cheaply as we do, therefore we are entering the European markets.

There has been great waste in getting the oil into the tanks. Sometimes in opening the gusher much of the oil is lost. Often it catches fire and burns for days before it can be gotten under control.

* A picture of this well and the portrait of Mr. Drake were published in THE SCHOOL JOURNAL last month.

trol. In late years this is handled much better in this country, but in Russia much of the oil is yet wasted by burning. The most valuable portions of the crude oil are those which volatilize with great ease; the gasoline and lighter burning oils. Much waste takes place by this kind of evaporation. However, a good start is made to prevent further waste by improvements in tank-making. Instead of earthen tanks we now have steel tanks which will hold 50,000 or more barrels.

At the present rate of consumption of the petroleum will it not soon be exhausted? Should we not use it only for the essential things? That which we *must* have it for? Oil is essential for furnishing light for country homes and places where electricity cannot be had. It is cheaper and is the only light the poorer classes can afford. It is absolutely necessary for lubrication. Not a pound of coal can be converted into power without it. In many places where the petroleum is produced to a great extent, it is used for fuel. Here it takes the place of coal. In California, where fuel is scarce, the petroleum is used by the railroads and manufacturing industries. This means in the future, some time, we will pay for this misappropriation of petroleum. We see the same extravagance with the oil which took place some years ago with the timber. Fine walnut trees, which would have been worth a thousand dollars, were split up into rails. In some places petroleum is used to make roads, because it is cheaper than rocks and gravel.

All this waste will probably continue to go on as long as the oil is cheaper and more convenient than coal. There is too great a desire on the part of man to get what oil is in the earth. The man on one claim may get the oil from the other claim if he gets his wells down first. In the mad rush we are putting the oil on the market as soon as possible. Delay means loss to the claimant.

In West Virginia the estimate has been made at 5,000 barrels per square mile. This is much higher than the fields produce in Pennsylvania. There is, however, less than 10,000 square miles of oil territory. If we take 5,000 barrels as an average per square mile, at the present rate of taking the oil out of the ground, the present fields will be exhausted in less than twenty years. However, the unexpected is happening every year, and we are finding new fields. The West is just opening up to this industry. Alaska is rich in oil fields.

The searching for petroleum has brought to light many other industries. It has stimulated the search for artesian wells; it has aided the production of salt and the mining of rock salt. It has aided the transportation by hydraulic methods. It has brought out a wonderfully effective method of producing sulphur. America now dominates the world in the sulphur market.

THE STANDARD OIL COMPANY

We cannot pass this subject without saying a few words about the Standard Oil Company. This company is not primarily or largely engaged in the production of petroleum. A few years ago it produced less than 12 per cent of the crude oil in the United States. It was engaged at first in transportation by pipe lines and tank cars and the refining of oil. The production has always been in the hands of many. When the oil is above the ground and stored in the tanks, then the Standard Oil takes it, transports it and refines it. The Standard Oil man measures the tank and turns it

into the pipes of the company and telegraphs the amount to headquarters.

The producer may select any day during the next two months as the day he will accept the market price for the oil. If he does not select a day, he is sent a check at the market price on the first day of the third month.

In the Illinois field there are tanks holding 30,000 barrels of oil, worth \$20,000. In Kansas as much as 20,000,000 barrels, worth \$12,000,000, are in the tanks at one time. The pipe lines from this Kansas field are operated directly from the Illinois field, by means of a great triple expansion pump. This pump draws the oil from the tanks and pushes it along thru two pipes, one eight inches and the other twelve inches in diameter. These pipes are stretching away toward the east. Other pumping stations are found along the line which energizes the flow. Thirty-five thousand barrels pass thru this line per day. The Standard Oil Company owns more than 8,000 miles of trunk pipe lines, fed by almost 75,000 miles of gathering lines.

In 1906 the Standard produced 23,000,000 barrels of refined oil and 6,000,000 barrels of naphthas, together with millions of barrels of lubricants and millions of pounds of paraffin wax and candles. It makes its own pumps, tank cars, barrels, glue, sulphuric acid, wooden cases and five-gallon tin cans for exportation. It has a fleet of sixty-nine steamers and twenty sailing vessels for the foreign market. It has more than 9,000 tank cars, 100 barges and ten towing steamers for domestic trade. It has three and a half thousand distributing stations for domestic trade. It has 165 importing stations, 5,000 distributing stations, 30 manufacturing plants and 4,000 tank wagons for the foreign market. The Standard Oil Company has steadily improved the quality of oil by constant inspection and tests.

The oil, when it comes from the ground, is usually brownish or greenish in color. It is much thicker than the refined oil which we use in the lamps. Some is thick and tarlike in appearance. When this kind is exposed to the air it turns to a solid black mass called asphaltum. When this is softened by heat and mixed with sand it makes very excellent roads. In many places the oil is used in this way, as it is cheaper than gravel.

There is need for scientific research. The conditions for the accumulation of petroleum in the earth should be investigated. If we knew definitely the primary origin of petroleum we might then study the geological conditions and perhaps determine where oil could be found. By this means thousands of dollars could be saved. Many useless wells are driven where nothing of value is obtained.

OIL ECONOMY

The methods of re-using lubricating oils have been developed to a high stage of efficiency. This is one step in direction of saving oil. Because of the great output the scientist has not been forced to the study of oil economy. Great benefit will be derived from the study of the constituents of various crude petroleum. We should obtain from each oil the greatest proportion of valuable constituents. For example, we know that the Pennsylvania oil does not contain dyes, but the oils in Texas and California do. If we know the nature of various petroleum we can utilize them all to better advantage.

The World's Commercial Products

How and Whence They Are Derived

Kinds of Fish

Alewife

The alewife is a fish which is obtained in large quantities off the eastern coasts of North America. In the United States it is considered to be superior to the herring. There is a large trade of this fish in a salted state all the way from St. John's, New Brunswick, to the West Indies. The annual amount is about 20,000 barrels.

Anchovy

This is a small fish of the herring family, from two to eight inches in length. It is abundant off the Mediterranean shores. A large trade is carried on in tinning anchovies at Cannes, and St. Tropez. Anchovies are chiefly used in the preparation of condiments.

Caviare

Caviare is a condiment prepared from the roes of various kinds of fish, particularly those of the sturgeon. There are two kinds—ordinary caviare and pressed caviare. The first is obtained by pickling the roes in vinegar, the other by machine pressing after salting, and subsequent drying. Caviare obtained from the sturgeon is nearly black, that from the mullet and carp is red.

Russia has practically the whole of the commerce in this article. The preparation of caviare is almost entirely carried on at Astrakhan, sturgeon being plentiful at the mouth of the Volga.

As much as 500,000 pounds have been made in a single year. It is a favorite delicacy in the United States as well as in Russia, but the consumption in other countries is not large.

Crab

The crab is an edible shell fish, belonging to the same family as the lobster and the crayfish. The crab lives along the sea coast. Several millions are taken annually off the coasts of England and Wales. Several species found along our shores are excellent eating.

Herring

The well-known fish called the herring is caught in great shoals for food. The fishery is largely carried on off the coasts of Great Britain, Norway, and Newfoundland. The shoals visit the east coast of Britain in June, and they gradually move southwards.

As a food, herrings are eaten either fresh, or salted and cured.

Mackerel

The fish known as the mackerel is taken in great quantities every year. The mackerel is generally eaten fresh, but the salted and smoked fish occasionally enter into commerce, though not to the same extent as some other varieties of fish. The American mackerel is of a species totally distinct from the European fish.

Menhaden

The menhaden is a fish of the herring family which is taken in large quantities off the eastern shores of the United States. Its flesh is not used for food, but the fish itself makes an excellent fertilizer and yields an oil which is employed in leather dressing, in the manufacture of rope, and in mixing colors.

Sprats

Sprats are small fishes of the herring genus. They are very abundant off the shores of Britain and the western coasts of Europe generally, especially in autumn and winter. Besides being used as a food they are in much request for the manufacture of anchovy paste, and the surplus forms an excellent fertilizer.

Sturgeon

The sturgeon is a fish belonging to a family of which there are about twenty-five different species. The sterlet is a small species of sturgeon, found principally in the Volga and the Danube. The products of the sturgeon, isinglass and caviare, form an important part of the commerce of Russia, especially at Astrakhan.

Turbot

The turbot is a flat fish which is highly prized as a food, and which is inferior in value only to the sole. It is very plentiful off the coasts of Great Britain and France, and the demand for it is great in both countries. Like the sole, the turbot is entirely absent from the coasts of America.

Haddock

This is a small fish, of the same genus as the codfish, which enters largely into commerce, both in its fresh and dried state.

Hake

The hake is also a fish of the cod family, found in the seas off the English and North American coasts. It is an important article of food and commerce, both in its fresh and dried state. It is dried in the same manner as cod and ling.

Eel

The eel is a soft-finned bony fish, distinguished by its serpent-like form. Eels are widely distributed over all the fresh waters and seas of the temperate and tropical zones.

Pilchard

The pilchard is a kind of herring. It is abundant in the English Channel, especially off the coast of Devon and Cornwall, and in the Mediterranean Sea. Sprats and sardines are simply young pilchards. About twenty-thousand hogsheads, each weighing 500 pounds and containing 3,000 pilchard, are annually exported from Cornwall and the large Mediterranean ports, principally for canning purposes.

Principal Commercial Routes of the World

Railways of the United States--II

- KANSAS CITY SOUTHERN RAILWAY.** (Texarkana and Fort Smith Railway.)
Missouri, Kansas, Arkansas, Oklahoma, Louisiana, Texas.
- LAKE ERIE AND WESTERN RAILROAD.**
Ohio, Indiana, Illinois.
- LAKE SHORE AND MICHIGAN SOUTHERN RAILWAY.**
New York, Pennsylvania, Ohio, Michigan, Indiana, Illinois.
- LEHIGH VALLEY RAILROAD.**
New York, New Jersey, Pennsylvania.
- LONG ISLAND RAILROAD.**
Long Island, New York.
- LOUISVILLE AND NASHVILLE RAILROAD.**
Kentucky, Indiana, Illinois, Georgia, North Carolina, Virginia, Tennessee, Alabama, Florida, Louisiana, Mississippi.
- MAINE CENTRAL RAILROAD.**
Maine, New Hampshire, Vermont, Quebec.
- MICHIGAN CENTRAL R. R.**
New York, Ontario, Michigan, Ohio, Indiana, Illinois.
- MINNEAPOLIS AND ST. LOUIS RAILROAD.** (Albert Lea Route.)
Minnesota, Iowa, South Dakota.
- MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RAILWAY.** (Soo Line.)
Michigan, Wisconsin, Minnesota, North Dakota, South Dakota.
- MISSOURI, KANSAS AND TEXAS RAILWAY.**
Missouri, Kansas, Oklahoma, Texas, Louisiana.
- MISSOURI PACIFIC RY.**
Missouri, Kansas, Nebraska, Colorado, Oklahoma, Arkansas, Louisiana, Tennessee, Illinois.
- MOBILE AND OHIO R. R.**
Missouri, Illinois, Kentucky, Tennessee, Mississippi, Alabama.
- NASHVILLE, CHATTANOOGA AND ST. LOUIS RAILWAY.** (Lookout Mountain Route.)
Georgia, Alabama, Tennessee, Kentucky.
- NEW YORK CENTRAL AND HUDSON RIVER R. R.**
New York, New Jersey, Pennsylvania, Massachusetts.
- NEW YORK, CHICAGO AND ST. LOUIS RAILROAD.**
New York, Pennsylvania, Ohio, Indiana, Illinois.
- NEW YORK, NEW HAVEN AND HARTFORD RAILROAD.**
Massachusetts, Rhode Island, Connecticut, New York.
- NEW YORK, SUSQUEHANNA AND WESTERN RAILROAD.**
New Jersey and New York.
- NEW YORK, ONTARIO AND WESTERN RAILWAY.**
New York, Pennsylvania.
- NORFOLK AND WESTERN RAILWAY.**
Maryland, West Virginia, Virginia, North Carolina, Ohio.
- NORTHERN PACIFIC RY.** (Yellowstone Park Line.)
Wisconsin, Minnesota, North Dakota, Montana, Idaho, Washington, Oregon.
- OREGON RAILROAD AND NAVIGATION Co.**
Oregon, Washington, Idaho.
- OREGON SHORT LINE RAILROAD.**
Utah, Wyoming, Idaho, Montana, Oregon.
- PENNSYLVANIA RAILROAD.**
New York, New Jersey, Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia, Michigan, Kentucky, Ohio, Indiana, Illinois.
- PERE MARQUETTE R. R.**
Michigan, Ohio, Indiana, Illinois.
- PHILADELPHIA AND READING RAILWAY.**
New Jersey, Pennsylvania, Delaware.
- QUEEN AND CRESCENT ROUTE.**
Ohio, Kentucky, Tennessee, Georgia, Alabama, Mississippi, Louisiana.
- RIO GRANDE WESTERN RAILWAY.**
Colorado, Utah.
- RUTLAND RAILROAD.**
Vermont, New York.
- SAN ANTONIO AND ARANSAS PASS RAILWAY.**
Texas.
- SEABOARD AIR LINE RY.**
Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama.
- SOUTHERN PACIFIC COMPANY.** (Sunset, Ogden and Shasta Routes.)
Louisiana, Texas, New Mexico, Arizona, California, Nevada, Oregon, Utah.
- SOUTHERN RAILWAY.**
District of Columbia, Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, Illinois, Indiana, Missouri.
- ST. JOSEPH AND GRAND ISLAND RAILWAY.**
Missouri, Kansas, and Nebraska.
- ST. LOUIS SOUTHWESTERN RAILWAY SYSTEM.** ("Cotton Belt Route.")
Illinois, Missouri, Arkansas, Louisiana, Texas.
- TEXAS AND PACIFIC RY.**
Louisiana, Arkansas, Texas.
- TOLEDO AND OHIO CENTRAL RAILWAY, AND KANAWHA AND MICHIGAN RY.** (Ohio Central Lines.)
Ohio, West Virginia.
- TOLEDO, ST. LOUIS AND WESTERN RAILROAD.** (Clover Leaf Route.)
Ohio, Indiana, Illinois, Missouri.
- UNION PACIFIC RAILROAD.** (Overland Route.)
Kansas, Nebraska, Iowa, Colorado, Wyoming, Utah, Missouri.
- VANDALIA RAILROAD Co.**
Indiana, Illinois, Missouri.
- WABASH RAILROAD.**
Ontario, Canada, Ohio, Indiana, Michigan, Illinois, Missouri, Iowa.
- WESTERN MARYLAND RAILROAD.**
Maryland, Pennsylvania, West Virginia.
- WHEELING AND LAKE ERIE RAILROAD.**
Ohio.
- WISCONSIN CENTRAL RY.**
Illinois, Wisconsin, Michigan, Minnesota.

Mathematics As a Live Interest

By ANNA GILLINGHAM, for two years a Teacher of Mathematics in the Ethical Culture School, New York.

Before proceeding as already outlined to take up the correlations of Mathematics with Geography, perhaps we may be pardoned for inserting a few paragraphs upon drill, varied if possible, but old-fashioned, tabooed, gladly shirked drill.

The kind of work that has been described is very fascinating to the teacher when she once begins to formulate it, and she is easily led into excesses. In these correlated problems the number combinations as such are not very difficult, nor well systematized. Carried to an extreme there is danger of their making a class inaccurate, leaving insufficient time for thoro grounding upon some of the important processes which happen to have risen less frequently.

Above, the word drill is used loosely. By it is meant, for the moment, all abstract work, fundamental processes, fractions, percentage, etc. Many modern courses of study and text-books provide far too little time for acquiring skill in the use of the tools which will be needed thruout the entire mathematics course. They seem to ignore the fact that such skill must be the result, not of explicit explanation, nor clear understanding alone, but of practice, tireless and unceasing.

1. We are in danger of assuming that children share our feeling about monotony, when, unless spoiled by humoring, they do not. It can very easily be allowed to seem dull work to inquire day after day the number of quarts in a peck, feet in a mile, etc., and to insist that columns be added and division examples worked over and over again. One longs to make progress and to liven things up.

We need to look at the children and re-discover that they share our weariness to a very slight degree. They love to reiterate the familiar, witness the endless repetition of the fairy tales and old ditties. Who has not watched a class burst into a peal of laughter over a joke repeated dozens of times? I have seen the utmost satisfaction on the faces of a class when they sat back to recite tables for the several hundredth time.

There is so much which they can never do more than relatively well. Try as they will they cannot write a composition as good as models shown them. They know that back of their simple text-books are fathomless depths of wisdom they have not yet penetrated. Their inability to execute what of excellence they are able dimly to conceive often disturbs them more than their elders realize. Hence the unspeakable comfort of an exact science where they can occasionally attain perfection.

They take solid comfort in the fact that a certain arithmetic paper is perfect,—not "good for children of their ages," but perfect, just as good as if worked by the head of the Mathematics Department of Harvard University.

Yes, they love drill, which doesn't mean that they should have nothing else, but that they don't need pity when they are having it.

2. If they don't have it at the age when it is "fun," they lose their joy in it before receiving its benefits. Then woe to them and to their future teachers. If there is anything appalling it is to confront a class who ought to be doing hard thought work, but whose results, owing to insufficient drill farther down, are totally unreliable,

and who, without sense of disgrace, have no expectation of their being otherwise. Mechanical drill was dropped in the Second or Third Grade, therefore it is babyish, and a return to it is beneath their dignity. It is almost the most discouraging task one can attack.

3. One of our great fallacies is to suppose that because a subject is taken up concretely it will be remembered. Where it is possible to introduce Liquid Measure thru butter-making in the kitchen, or addition of fractions because they are necessary in the shop, of course these are the ideal points of departure. The point is, don't trust to this to insure a permanent impression. The visitor smiles and says, "How lovely, children taught that way will never forget it." Simply not true!

One class which had had two years of such use of the Liquid Measure cans in Domestic Science gave exaggerated proof of this. When the time came to formulate the table as a whole, the class evolved the following statements with fair glibness and entire self-satisfaction:

2 gills 1 pint.
2 pints 1 quart.
2 quarts 1 gallon.

In reply to my evident surprise one of the members explained that there wouldn't be any use in having different cans if they were all the same size, so each was half as big as the next one. It took days of drill before the class knew that table and could use it in reduction examples with precision. As an introduction, ideal, but not to be trusted alone.

4. Another way in which we deprive pupils of much legitimate pleasure, and make demands upon their future time, already crowded full enough, is by talking down to them in the matter of names. How absurd for children of any age to be permitted to designate the decimal point as "the dot that separates dollars and cents," or to point and awkwardly refer to "that number there, the one that you're dividing by the other one!" There is no sense in their talking about "turning the divisor upside down," when "invert" is the correct word and perfectly easy to pronounce.

It is often economy of time and energy for pupils to become familiar with as many of the common expressions and symbols as possible. With a little thought many future subjects may be robbed of their strangeness.

$9^2 = ?$ $8^2 = ?$ $\sqrt{64} = ?$ $\sqrt{81} = ?$

are simply brief methods of asking multiplication and factoring questions.

At any rate it is an insult to the children's intelligence to invent circumlocutions for such processes and signs as form part of their work.

5. Let there be drill, "varied if possible," because no one kind of exercise can combine all the useful elements or draw out the best of which they are capable from all the pupils. But, let it be reiterated, unspoiled children do not crave the variety as much as we do. They may even be much injured by it.

The prevailing modern spirit of restlessness and purposeless desire for change has invaded many progressive schools to their great detriment. When a class settles down with a bored expression and looks toward the teacher as if asking, "Well,

what have you to offer for our entertainment this time?" frequently what they most need is good, hard grind, just for the sake of grind.

Still teachers must be considered as well as pupils, and if we are going to drift into stereotyped expressions and weary tones, through lack of variety, by all means let us reanimate ourselves by as many new devices as can be employed without unsettling the children and making them expect constant changes. But it is just as well to recognize that we are doing some of those things to keep ourselves from stagnating, rather than deceive ourselves into the belief that the needs of the youngsters imperatively demand them.

Original problems based on given figures, or entirely the pupil's own are often not only valuable to the children, but enlightening to the teacher. Many children do not comprehend the real nature of a problem till they try to make one. You may tell them till you are tired that a problem must have given conditions and requirements. Only experimenting for themselves will make them see anything out of the way in such a statement as:

A boy bought a knife for \$.50 and some candy for \$.25, how much money had he left? or, A man bought a horse for \$150 and a carriage for \$100 more.

The following three problems were made out and neatly worked with logical correctness by pupils in a fifth-grade class who had had correct values for all these items given, without special remark, in dozens of problems during the preceding weeks.

1. Find cost of 17 bu. of potatoes at \$15.75 per bu.
2. Find cost of a flock of horses at \$9 each.
3. How long will it take a R. R. train to go from New York to San Francisco at 100 miles an hour?

The criticism of these and similar problems set the class to watching for actual prices and rates as never before.

Not infrequently it is the best possible lesson to assign a number of text-book problems, to be worked after little or no explanation. So much has been said about the stultifying effect of keeping children with their heads bent over a book, that nowadays we are almost afraid to assign a text-book lesson, and when we do, we go all over it and smooth out the hard places. This is necessary of course in teaching children how to attack a new subject. But when they have learned how to read intelligently, they should often be thrown on their own resources to ascertain for themselves what the book means and to fulfill its requirements.

At the close of this paper on abstract work, perhaps it may not be amiss to give the explanation and diagram which have helped many children over one of the most difficult, least understood points in Elementary Arithmetic.

Multiplication of fractions is very easy, and with cancellation most attractive, and step by step a class learns it before they quite know what they are at. Then some day when they have felt that it was practically mastered, one of the children announces that he doesn't understand that at all. It isn't multiplying by $\frac{3}{8}$ or $\frac{3}{4}$, it's dividing, and the result is smaller instead of larger than the number he started with.

Others agree, and presently it is only the poorest half dozen in the class who fail to understand that they really don't understand.

With paper and pencil to draw as well as write, they are asked for the product of a number by an integer, e. g., $4 \times 3 = 12$.

Next they are asked for 3×3 , which being a smaller multiplier yields a smaller result. Two times three is still smaller. One time three is just three. Three taken, not four times, nor three times, but "only $\frac{1}{3}$ a time" is still less, i. e., one and a half.

Hence multiplying increases the multiplicand only so long as the multiplier is more than one.

In the same way, a small number is contained more times in another number than a larger number would be. If the divisor is less than a unit, the result will be a larger number than the dividend.

$$12 \div \frac{1}{3} = 36.$$

There are three-thirds in one and in 12 there are $12 \times 3 = 36$ thirds. $\frac{3}{3}$ is contained only half as many times as $\frac{1}{3}$ i. e. $\frac{1}{3}$ of 12×3 . One way of writing division is to place the divisor under the dividend i. e. 12×3 or $12 \times \frac{3}{3}$.

$$\frac{\quad}{2}$$

This is seen to be multiplying by the divisor inverted.

Mannheim Trade High School

Consul Samuel H. Shank furnishes the following information concerning the Trade High School opened in Mannheim on May 1, 1908:

The object of the school, which is under the direction of the minister of justice and public instruction of the Duchy of Baden, is to provide instruction in political economy, sociology, and agricultural science as they are related to trade and manufacturing industries. To this end it offers courses of instruction to young people desiring to engage in business pursuits; to those already engaged in business special scientific instruction along various lines; and to official and professional men an opportunity to acquire a business education both theoretical and practical. The subjects taught are as follows: (1) Production and trade—hunting, hunting laws, and fur trade, inland and sea fisheries and trade in fishery products, forestry and lumber trade, stock raising, meat, dairy products, trade in stock, wool, hides, leather, farming and grain production, grain trade, agricultural by-products and distilling, plantations and sugar and cotton trade; (2) mining and metal industries; (3) international economy and colonial politics; (4) banks and banking; (5) science of finance; (6) life insurance; (7) protection of laborers.

Special lectures will be given on state and private railway systems; the economical workings of railways and railway traffic; fundamental principles of political economy; securities; exchange and settlement of accounts, etc.

The hours of instruction are mostly in the evening, as the school is intended for those who cannot devote their whole time thereto.

The course consists of four terms of six months each. The admission fee is \$4.76 and an additional fee of \$28.56 for each term to those taking the full course of instruction. These costs are increased 50 per cent for foreigners who desire to attend. Cards for attendance at lectures may be had for \$1.19 for courses having lectures one hour a week, \$2.14 for those of two hours a week, \$2.85 for three hours, \$3.57 for four hours, and \$4.76 for five hours. A reduction is made to members of unions in Mannheim and vicinity. The school is supported by the city of Mannheim.

The students have the privilege of attending lectures at the University of Heidelberg, which can be reached by train in twenty minutes.

Present Day History

Notes of the News of the World

Ex-President Roosevelt planned to sail from New York on March 23d, on a hunting trip to Africa. He is to lead a scientific expedition of the Smithsonian Institution, under the management of Maj. Edgar A. Mearns. Two other naturalists are to be of the Smithsonian party, J. Alden Loring and Edmund Heller.

The expiring Sixtieth Congress increased the President's salary from \$50,000 to \$75,000, but refused the usual appropriation of \$25,000 for his traveling expenses.

Photographs of President Taft and ex-President Roosevelt were sent by wire from Washington to New York on March 4. These are said to be the first telegraphic photographs transmitted in the United States.

The lower house of the Nebraska legislature, on March 4, adopted by 62 to 34 a constitutional amendment empowering women to vote.

The new President of Cuba, Mr. Gomez, signed, on March 6, a general amnesty bill recently passed by the legislature, providing for the release from prison of persons convicted of crimes that could not be considered gravely atrocious. In accordance with the bill the Havana courts have issued orders for the release of more than eight hundred prisoners.

Dr. James B. Angell resigned from the presidency of the University of Michigan in February, after thirty-eight years of continuous service. President Angell's resignation is to take effect at the close of the present academic year. He will continue his connection with the University as lecturer on international law and the history of treaties, and as chancellor he will receive an annual salary of \$4,000 and the maintenance of his present residence.

The new charter commission of New York has disclosed its proposed changes in the city government. It would make ten years' residence a qualification for Mayor and increase the salary to

\$25,000; would provide for a uniformed Superintendent of Police to be promoted from the police force; would abolish the Board of Aldermen and create a Council of thirty-nine members to serve without pay, having increased legislative powers, but no administrative functions; would abolish coroners; and would make the Board of Education a department instead of a separate corporation.

In New York City there are 150,000 men out of work. In the bread line, where provisions are supplied, there is an average of 2,000 every night. Whenever work outside of city can be found for the unemployed, free transportation is furnished to those who will go to the new field of labor. With the coming of spring work it is expected that the situation of the unemployed will be somewhat relieved.

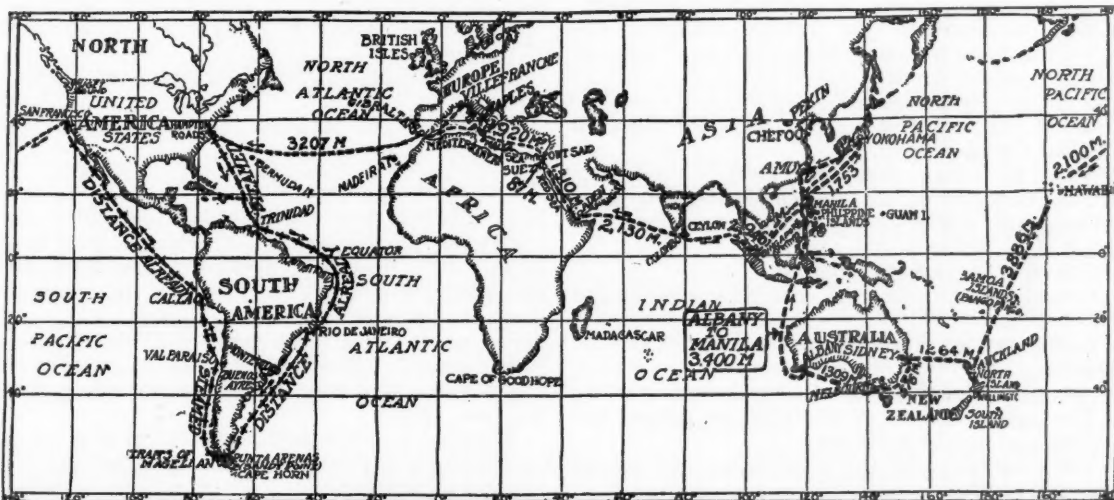
The two-cent letter postage rate went into effect between Newfoundland and the United States on March 1st. The bringing about of this rate was due, in a measure, to the efforts of Dr. Grenfell, of Labrador fame.

A hundred orphans who lost their parents in the Sicilian earthquake are to be cared for in a home which is to be built with money given by the American Red Cross Society. The international committee has decided to found ten orphanages.

Return of the Fleet

The Atlantic battleship fleet of sixteen ships entered Hampton Roads February 22nd, on its return from its long cruise around the world. It was welcomed with salutes and music, and its ships passed in review before President Roosevelt, who was stationed on the yacht *Mayflower*. Later the President received the admirals and captains on the *Mayflower*, and afterwards Mr. Roosevelt visited each of the divisional flag ships. The fleet completed its long cruise of 45,000 miles without mishap.

The ships hereafter will be painted gray instead of white.



The Route of the Big Fleet Around the World, from Hampton Roads to Hampton Roads

Work of the Sixtieth Congress

At noon on March 4 the Sixtieth Congress came to an end, says the *Outlook* for March 13. The Sixty-first began. Vice-President Sherman, having taken the oath of office, at once called together the Senate of the new Congress. It met in obedience to the Presidential proclamation convening it in extraordinary session. The event, of course, awakens this question in every one's mind: "What did the Sixtieth Congress do?" It is distinguished in two particulars: First, in the record of the Senate in ratifying an unprecedented number of treaties—fifty-eight. These include twenty-four arbitration treaties, eleven conventions submitted by the second Hague Peace Conference, extradition, naturalization, and trade-mark treaties, the Newfoundland fisheries agreement, and, on the very last day of Congress, a treaty with Great Britain relating to the use of the boundary waters between U. S. and Canada.

The second particular in which the Sixtieth Congress is unique is in the unprecedented sums appropriated. They were the largest on record, that for the first session being \$1,008,000,000, and that for the second, \$1,048,000,000, a total of nearly two hundred millions more than the record of the Fifty-ninth Congress, itself unprecedented. And this in a panic year! The raw material presented to the Sixtieth Congress in the shape of bills was stupendous.

No less than thirty-eight thousand bills were introduced in the two Houses. Out of this number about two hundred and eighty will become law. The long session of this Congress lasted from December, 1907, to June, 1908; the second from December, 1908, to March, 1909. Among the important acts of the first session were:

An Employers' Liability Law, replacing one pronounced unconstitutional by Supreme Court.

A Government Liability Law to compensate Federal employees injured in the discharge of their duty.

A Child Labor Law for the District of Columbia. Increased pay and pensions for the Life-Saving Service.

Authorizing the Inter-State Commerce Commission, in the promotion of the safety of employees and passengers, to prescribe regulations for the transportation of explosives by common carriers.

Tariff inquiry begun, preliminary to revision.

Emergency currency provided and taxed to insure retirement as soon as stringency disappears.

National Monetary Commission created.

Militia made an integral part of the National military establishment.

Army pay increased.

Army Medical Corps increased and Reserve Medical Corps created.

Naval enlistment force increased.

Two battleships, ten torpedo-boat destroyers, three steam colliers, and eight submarines authorized.

Consular service reorganized.

Repeal of application of coastwise laws to the Philippines.

Remission to China of part of the Boxer indemnity.

Among important acts of second session were:

The appropriation of \$800,000 to relieve the Italian earthquake sufferers.

The prohibition of the importation and use of smoking opium.

Saving the Calaveras big trees in California.

Extension for two years of the Burton Bill limit-

ing the amount of water to be taken from Niagara Falls.

Codification of the penal laws.

Amendment and consolidation of the copyright laws, chiefly to protect composers against the unauthorized use of their works in instruments for the mechanical and automatic reproduction of music.

Permission to the discharged negro soldiers of the Twenty-fifth Infantry to re-enlist on establishing their innocence in the Brownsville affray.

Increase of the President's salary to \$75,000.

Two new battleships authorized.

The Liberian Commission authorized.

The Inauguration

The pleasure of the hundreds of thousands of people who had gathered in Washington to witness the inauguration of President Taft on March 4 was largely decreased by a sudden blizzard which sped along the Atlantic Coast, with Washington as about its center. The plans had to be changed at the last moment, and Mr. Taft took the oath in the Senate Chamber instead of out-of-doors as is the custom.

According to the usual custom, President Roosevelt accompanied the President-elect from the White House to the Capitol. The new President went directly from the Capitol to the White House, after delivering an address in the Senate, and from a stand on Pennsylvania Avenue reviewed the parade.

Ex-President Roosevelt, after congratulating his successor, walked out of the Capitol and at once took his train for Oyster Bay.

President Taft's Cabinet

The following are the members of President Taft's cabinet.

Philander C. Knox, of Pennsylvania, secretary of state.

Franklin MacVeagh, of Illinois, secretary of the treasury.

Jacob M. Dickinson, of Tennessee, secretary of war.

George W. Wickersham, of New York, attorney-general.

Frank H. Hitchcock, of Massachusetts, post-master-general.

George von L. Meyer, of Massachusetts, secretary of the navy.

Richard A. Ballinger, of Washington, secretary of the interior.

James Wilson, of Iowa, secretary of agriculture.

Charles Nagel, of Missouri, secretary of commerce and labor.

Homes for Tuberculosis Patients

Mrs. W. K. Vanderbilt, Sr., who has long been interested in the fight against tuberculosis, has arranged for a new experiment in the construction of hygienic tenement houses. This, she hopes, will prove a large factor in the elimination of the disease. She has set aside \$1,000,000 for this purpose, and the work of clearing the ground has been begun.

The houses will be built in the form of a hollow square, and will allow of the greatest possible amount of light and air. There will be no indoor stairways and back hallways, and camps for patients will be provided on the roof of each house.

Death of Carroll D. Wright

Carroll D. Wright, since 1902 president of Clark College, and formerly United States Commissioner of Labor, died February 20th. President Wright was a veteran of the Civil War and the author of many economic works. He had served as chief of the Massachusetts Directors of Statistics and Labor, United States Commissioner of Labor, Director of the Eleventh Census, and professor of Social Economics at Columbia University.

Death of Geronimo

Geronimo, the famous Apache chief, died February 17, at the age of ninety years. He had been a prisoner of war at Fort Sill for a number of years.

Geronimo was made war chief of his tribe at the age of sixteen years, and he afterwards became the leading chief. The Apaches, under his leadership, raided settlements in Arizona, New Mexico and along the Mexican frontier for many years. The chief was captured several times, but escaped, until, in 1886, he was taken prisoner by Captain Lawton of General Miles' command.

Many householders will read with interest and envy the report from an archeologist. He has found records, according to the *Youth's Companion*, in ancient Babylon, which indicate that for a sum equivalent to three dollars a year a man could rent an eight-room house with a courtyard, a garden, and access to the river.

Educational Meetings

March 31—April 2.—Northern Nebraska Teachers Association, Norfolk.

April 1-2.—Classical Association of New England, Boston University.

April 8-10.—Middle Tennessee Educational Association, Nashville.

April 8-10, 1909.—Alabama Educational Association, Birmingham.

April 8-11.—Eastern Commercial Teachers Association, at Providence, R. I.; F. E. Lakey, English High School, Boston, president.

June 16-18.—West Virginia Educational Association, Clarksburg; president, James Rosier, Fairmont; secretary, A. J. Wilkinson, Grafton.

June 29—July 1.—Western division of Oregon State Teachers Association, Albany.

June 29—July 1.—Pennsylvania State Educational Association, at Bethlehem, Pa.; Supt. Charles S. Foos, Reading, president.

July 5-9.—National Educational Association, at Denver, Colorado; L. D. Harvey, Menominee, Wis., president.

July 6-9.—American Institute of Instruction, Castine, Maine; E. C. Andrews, Shelton, Conn., secretary.

October 8-9.—Eastern Illinois Teachers Association, Danville.

Dec. 28-30.—Missouri State Teachers Association, St. Louis; President, B. G. Shackelford, Cape Girardeau; secretary, E. M. Carter, Jefferson City.

Noted Americans Study Outlines--IV.

GRADES VI AND VII

By McLEOD

Thomas Jefferson

1. BORN

April 13, 1743.
Charlottesville, Va.

2. FAMILY

Eldest of eight children.
Father a planter and land surveyor.

3. BOYHOOD

Sent to school at age of 7.
Prepared for college by a minister
At 17 years of age, entered the
College of William and Mary.

4. MANHOOD

Lawyer at the age of 24.
Married when 29 years old to a
widow.
Settled at Monticello, Va.
Father of six children, only two
of whom lived to grow up.

5. PUBLIC POSITIONS

1769, Elected to Virginia
House of Burgesses.
1775, Member of First
American Congress.
Author of Declaration of
Independence.
1779, Gov. of Virginia.
1784, Minister to Europe.

6. LAST EVENTS

Founded University of Va.
Money embarrassments.
Private parties raised funds
for him.

7. DEATH

July 4, 1826.
In his 91st year.
Fiftieth anniversary of Declaration
of Independence.

8. CHARACTER AND ATTAINMENTS

Diligent student.
Fine mathematician.
Excellent musician and lin-
guist.
Remarkable orator.
Able writer.
Affectionate.
Positive in ideas.

9. APPEARANCE

Over six feet in height.
Angular features.
Reddish hair.
Light eyes.

Notes of New Books

"Mind in the Making," a "Study in Mental Development," by E. J. Swift, Professor of Psychology in Washington University, is a plea for the personal element in education and for the extension of the experimental method. "Recent medical science has shown that dulness may be caused by a variety of pathological conditions, far removed in their location from the immediate center of intelligence." To show how often the brilliant man evolved from a most unpromising childhood, he recites the cases of Darwin, who was "singularly incapable of mastering a language"; Sam Johnson, who was so indolent his master whipt him,— "Without that, sir, I should have done nothing"; Robert Fulton, who was a dullard in school and the "birch rod was frequent persuader"; Heine, "who made a poor showing at school"; "George Eliot was not precocious"; "Sir Walter Scott never took very kindly to school"; John Hunter, the surgeon, "hated school"; James Russell Lowell was suspended from college "for general negligence"; Oliver Goldsmith's teacher thought him unusually "dull"; Goethe failed to receive a Doctor's degree, because "his thesis was unsatisfactory"; Henry Ward Beecher was "stolid"; and so on, with regard to many others, "whose subsequent careers demonstrated the inadequacy of the usual standards as tests of ability." The author therefore points to greater flexibility in the method of teaching. Among the topics discussed are: Criminal Tendencies, The School and the Individual, Reflex Neuroses, Some Nervous Disturbances, The Psychology of Learning, The Racial Brain, Experimental Pedagogy, Schoolmastering Education, Reconstruction of Nature.

Several of the chapters appeared earlier in periodicals, and are now brought together for greater convenience. Teachers will find it a desirable addition to their professional libraries. 12mo. Cloth. 340 pp. Price, \$1.25. (Charles Scribner's Sons, New York.) H. B. B.

"The American College," by Abraham Flexner. Citing the second annual report of President Henry S. Pritchett, of the Carnegie Foundation for the Advancement of Teaching, that the American College shows weakness which its best friends clearly recognize, the Doctor analyzes the educational procedure of our colleges from the first year to the end of the fourth. He finds much to criticize, and says some things that give one the torpedo shock of which Socrates speaks in one of his dialogues. (The Century Co. Pp. 236. \$1.00 net.)

Probably half the common-school teachers of the nation belong to the class for which John Wirt Dinsmore's "Teaching a District School" is intended. Many useful hints are given; and a specimen program is offered, showing the recitation and study periods for each grade of the school. (American Book Co.)

"Carla Wenckebach, Pioneer," by Margarethe Müller, is a very readable, very human story of a Wellesley teacher of German language and literature, who died on Dec. 29, 1902, three weeks after Mrs. Alice Freeman Palmer, her friend, had died in Paris. Particularly interesting is the account, chiefly in Miss Wenckebach's own words, of the way in which this German lady, who had been tutoring for a living in New York, was engaged by Miss Freeman as the head of the German Department at Wellesley. (Ginn & Co. Pp. 290. \$1.25 net.)

"Text-Book of School and Class Management," by Felix Arnold, Ph.D., represents a very profound discussion, yet practical, too. It gives the theory of management after the spirit and manner of the late Arnold Tompkins, and at the same time furnishes practical advice in detail for teacher and principal. The scope of the book is so wide that even an outline of the content is not possible here. Well worth reading. (Macmillan Co. Pp. 409.)

Important Latin Books

HIGH SCHOOL COURSE IN LATIN COMPOSITION

By CHARLES MCCOY BAKER, Horace Mann School, Teachers College, and ALEXANDER JAMES INGLIS, Horace Mann School, Teachers College. 12mo. Cloth. xiii+463 pages. \$1.00 net. Just ready.

This book consists of three parts, arranged for practice in writing Latin during the last three years of school, and, in addition, a summary of the Elements of Syntax.

Part I consists of a series of twenty-eight lessons based for content and vocabulary on Caesar's Commentaries, Books I to IV.

Part II comprises a series of twenty-six lessons based for content and vocabulary on the Orations of Cicero usually read in our schools.

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"Control of Body and Mind," Volume V of the Gulick Hygiene Series, by Mrs. Frances Gulick Jewett, is written with the conviction that such subjects as Attention, Choice, Will-Power, Habit, and Character should be made and can be made both interesting and inspiring to young people. It assumes that the reasoning power of eighth-grade children is strong enough to recognize the value of scientific discoveries, keen enough to see the force of their application, and logical enough to make the application for themselves. In the treatment of each subject, function rather than nerve anatomy receives the most attention. (Ginn & Co., Boston. Price, 60 cents.)

"Chardenal's Complete Course" is perhaps the best-known of the beginning books in French. A new edition has been prepared by M. S. Brooks, of the Brookline, Massachusetts, High School, retaining the simplicity and directness which made the popularity of the book, with added new features which are certain to give it even wider vogue. The following are four of the notable changes and additions: 1. Verbs and pronouns are introduced earlier in order to give greater variety to the exercises from the first; 2. The exercises have been entirely re-written and the sentences for translation made lively and colloquial; 3. Many conversational exercises consisting of questions only have been added; 4. The vocabulary has been improved by the insertion of many words of frequent occurrence in ordinary conversation. "Chardenal's French Course" will still be on the market in the old form, in addition to the revised edition. (Allyn & Bacon, publishers, New York City.)

"The Banking and Currency Problem in the United States," by Victor Morawetz, North American Review Publishing Company.—Mr. Morawetz is a lawyer of varied training in the firm of Seward Guthrie Steele & Morawetz. His studies have led him into the management of railroads and counseling banks and bankers. His opinions have therefore been formed from the broadest kind of experience and are such as reflect the views of leading financiers under the guidance of his own sound judgment. In this book, after considering the questions at issue and marking the effects of present-day monetary policies: Reserve money, The Gold Standard, Bank-notes, Expansion, he concludes that central regulation is necessary. He does not favor the Central Bank plan, however, regarding it as not practicable in the United States, altho successful in England. He does not favor the guarantee of Bank Deposits by government or union of Banks. But he does favor Central regulation, which can be secured thru a Central Committee to be composed of the Secretary of the Treasury and a Board of Management elected by the National Banks. In substance the plan provides that the National Banks have authority to issue notes upon their own credit, subject to an act of Congress authorizing the banks to form an association for the purpose. The practical working of this plan is similar to the association known as Clearing House in the large cities. The principal office is to be in Washington, with branch offices in every city where there is a United States treasury, to be extended afterwards to every city of one hundred thousand persons. The plan is elaborated in the book and anyone interested in the subject of preventing such a panic as that in 1907 in future would do well to study Morawitz' ideas. 1 Vol. 126 pages, 12 mo. Cloth, \$1.00 net. (North American Review Publishing Co., New York.) H. B. B.

"Recollections of My Life," by Hermann Krüsi (son of Pestalozzi's associate), late professor of philosophy of education at Oswego Normal School. Arranged and edited by Elizabeth Sheldon Alling. The editor explains in the preface that this is a memorial book devised especially for the pleasure of Professor Krüsi's personal friends—for people who loved him. The book is well printed on excellent paper. (The Grafton Press, New York.)

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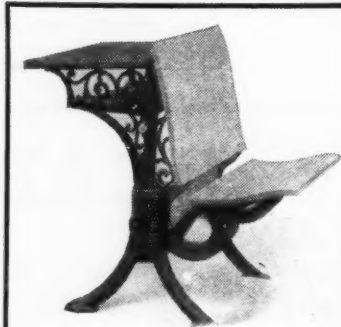
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Mr. Hamilton W. Mabie has collected a book of "Stories New and Old." These are gathered from American and English sources, and they form as charming a collection as has come out in a long time. The author says that they are typical American and English tales. In a sense they are. In another sense they are among the best of their kind. The volume is the sort of book that one wants to pick up when too tired to study or too restless to want to think very hard. The stories will bear reading several times, and if, as is possibly the case, the reader has seen one or more of them before, he will be only too glad to get them again in this form. The stories include one each, by William Austin, Dickens, Dr. John Brown (Rab and his Friends), Hawthorne, Poe, Robert Louis Stevenson, J. Henry Shorthouse, James Lane Allen and Owen Wister. The book and each story is prefaced by an introduction from the pen of the collector, and portraits of the authors appear in every case. (The Macmillan Company.)

"Education and National Character," by Henry Churchill King, Francis Greenwood Peabody, Lyman Abbott, Washington Gladden, and others, contains the papers that were read at the Fifth General Convention of the Religious Education Association, held at Washington, D. C., Feb. 11-13, 1908. (Pp. 319. \$1.50 net. The Religious Education Association, Chicago.)

Four new volumes in the series of "Life Stories for Young People" have been issued. The stories are translated from the German by George P. Upton. Each little volume presents simply and fascinatingly the life story of some figure of prominence in a period of history. "Marie Antoinette's Youth" is the story of the gay, pleasure-loving young queen, and the events which led to her tragic death. The story of "Arnold of Winkelried" and his heroism, which gained for the Confederation of Swiss States their independence, is delightfully told in another volume. "The Duke of Brittany" is the story of Arthur, Son of Geoffrey Plantagenet, and Constance of Brittany,

and his assassination by John Lackland, in view of his claim to the English throne. "Undine" is one of the masterpieces of Frederich Heinrich Karl, Baron de la Motte Fougue. The stories will not only interest and amuse, but will familiarize the young reader with historical characters and events, and so instruct as well. (A. C. McClurg & Co., Chicago. Net, 60 cents.)

"The Story of the Greek People" is an elementary history of Greece by Eva March Tappan, Ph.D., which is planned not only to outline the chief events in the history of the Greek Nation, but to picture the Greek people, their characteristics and customs. The famous Greeks, from the days of the myths to the time of Alexander the Great, are introduced with their characteristic stories. The book is well supplemented with maps and suitable illustrations, which are intended to put the reader into the spirit of the Greek world. Each chapter is concluded with a brief "Summary" of the contents, and "Suggestions for Written Work." The book will prove an interesting supplementary reader, altho the vocabulary is somewhat mature for the elementary pupil. (Houghton, Mifflin & Co., Boston. Net, 65 cents.)

"William the Conqueror and the Rule of the Normans," by Frank Merry Stenton, M.A., Late Scholar of Keble College, Oxford, is a recent addition to the well-known series of biographical studies entitled "Heroes of the Nations." The volume clearly outlines the events and conditions leading up to the Battle of Hastings, 1066, and discusses the constitutional reorganization which followed the Norman Conquest. It is splendidly supplemented with maps, genealogical charts, and illustrations, the most interesting and unusual of which are reproductions from the "Bayeux Tapestry." "William the Conqueror" will appeal to all who are interested in the Norman Conquest and its results, as it is a valuable addition to the literature on this period. (G. P. Putnam Sons. Net, \$1.35.)

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At the meeting of the Mississippi Teachers' Association to be held at Natchez, April 29th to May 1st, 1909, a spelling contest will be held. A gold medal will be awarded to the best individual speller, while an engrossed certificate will go to the school or county whose team (of five contestants) makes the highest record. For the medal contest, any white child of any school, county or college may enter. For the team prize, any county, school or college that sends a full team of five may enter. No county, school or college will be permitted to send more than one team. The contest will be based on words taken from the spellers of the regular State adoption.

Another important feature of this meeting will be exhibits of industrial and manual training work. In line with this, an invitation has been extended to Prof. Paul H. Hanus of Harvard University to deliver an address or lecture on manual training in schools.

The State Board of Health has been requested to furnish an expert to lecture on communicable diseases, such as tuberculosis, etc. The School Improvement Association will be made a department of the association and will have a place on the program.

Education Worth While

A book has been written lately which contains the names of ten thousand successful men. Dr. W. T. Harris, recently United States Commissioner of Education, compiled some statistics from this book, which, in re-

gard to the mental training of these men, showed: (1) That from 1800 to 1870 the uneducated boy in the United States failed entirely to become so notable in any department of usefulness and reputable endeavor as to attract the attention of the editors of this book, and that only twenty-four self-taught men succeeded. (2) That a boy with only the training below the high school had one chance in nine thousand. (3) That a boy with high school training had one chance in four hundred: that is, he had twenty-two times the opportunity of the boy who stopped at the end of the eighth grade. (4) That a college education gave one chance in forty; that is, that this young man's chances were ten times better than those of the high school boy, and two hundred and twenty times better than those of the boy whose training stopped with the eighth grade.

The Nervous Child

Occasional numbers of *Collier's Weekly* have in the past few months published articles by Dr. Frederick Peterson, addressed to nervous people in various ranks of life. In the number for January 9, Dr. Peterson addresses his talk to mothers of nervous children. He concludes with what he calls "A map of life for the nervous child," which reads as follows:

I.—No stimulants should ever be given to the little one, no tea, coffee, wine, or beer. Narcotic drugs should never be employed, such as "soothing sirups" and the like.

II.—Every organ and function should be kept in the highest state of

health, and the nutrition should be especially looked after. The best kind of strengthening foods should be given.

III.—The daily bath, physical exercise, sleeping in cold and well-ventilated rooms, thin covering, hard mattresses, life in the open air, education to endure ordinary pain; all these measures should be carried out to increase the child's vitality and resistance to physical and mental disease.

IV.—Develop the physical rather than the mental side of the child. Let there be no schooling until the age of seven years or even later in some instances.

V.—Do not permit of indiscriminate reading, and especially avoid books which stimulate the fancy or imagination. Outdoor scientific or mechanical studies are best, such as natural history in all its bearings, carpentry, etc.

VI.—Regulate carefully the hours of rest and work.

VII.—Accustom the child to quiet obedience, and train it practically in self-control.

VIII.—A country school, when the time is ripe for it, or better, a quiet country home under the care of a tutor or medical man, and away from the indulgent influences of home, would be best.

IX.—The period of puberty needs especial supervision because of the particular dangers of that period of stress.

X.—In choosing an occupation for later life, let it be manual rather than mental, out-of-door rather than indoor, and let the life be a country rather than a city life.

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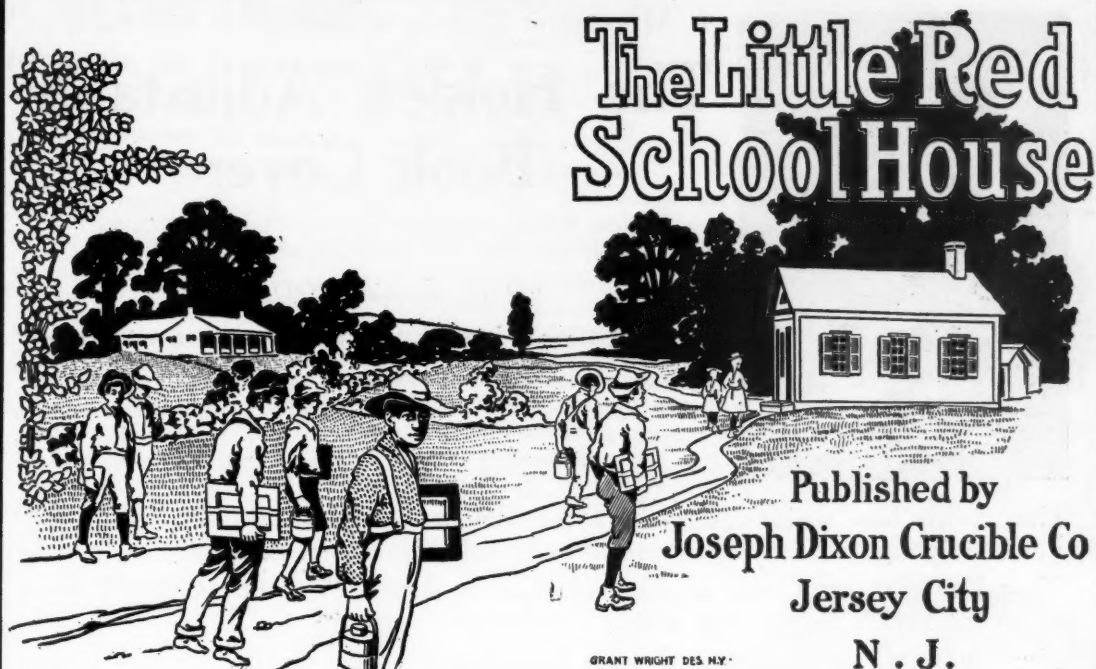
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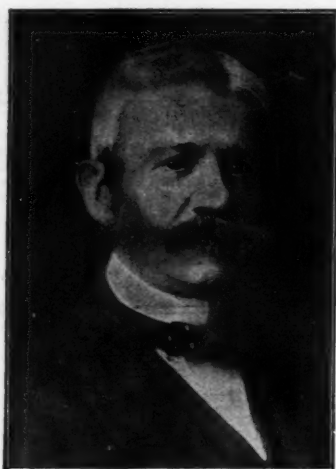
¶ The Dixon Company has just issued a 32 page booklet similar in style to their pencil Geography, but this one deals with Biography. It gives about sixty brief accounts of a few of the men and women who have been identified with the early history of this country, and who attended what was then known as "The Little Red School House."

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A year ago the pupils of the grammar grades were asked to write short reviews of their favorite books in the class library, and these reviews, numbering several thousand, written without any knowledge on the pupil's part of the use to be made of their opin-

ions, were collected and tabulated in the bureau of libraries and this list was made in order of popularity:

1. Little Women (Alcott).
2. Sara Crewe (Burnett).
3. Uncle Tom's Cabin (Stowe).
4. Black Beauty (Sewell).
5. Birds' Christmas Carol (Wiggin).
6. Robinson Crusoe (De Foe).
7. Rebecca of Sunnybrook Farm.
8. Old Fashioned Girl (Alcott).
9. Grimm's Fairy Tales.
10. Evangeline (Longfellow).
11. Alice in Wonderland (Carroll).
12. Little Lord Fauntleroy (Burnett).
13. Little Men (Alcott).
14. Revolutionary Maid (Blanchard).
15. Five Little Peppers (Sidney).
16. John Halifax (Mulock).
17. Bow of Orange Ribbon (Barr).
18. Under the Lilacs (Alcott).
19. David Copperfield (Dickens).
20. Hope Benham (Perry).
21. Trinity Bells (Barr).
22. Eight Cousins (Alcott).
23. For the Honor of the School (Barr).
24. Girl of '76 (Blanchard).
25. Ivanhoe (Scott).
26. Little Lame Prince (Mulock).
27. Oliver Twist (Dickens).
28. Ramona (Jackson).
29. Story of Betty (Wells).
30. Andersen's Fairy Tales.
31. Donald and Dorothy (Dodge).
32. Lady of the Lake (Scott).
33. Merchant of Venice.
34. Christmas Carol (Dickens).
35. Blue Fairy Book (Lang).
36. Huckleberry Finn (Twain).

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This book is devoted to the study of phonics as an aid to reading. The directions given are simple, but so full and detailed, that any teacher can, in a short time, gain from them all the aid she needs in learning phonics herself and in applying it to her daily work in the primary grades. Contains the DRILL BOOK, which is also published separately for the use of pupils. Cloth 133 pages. Price 40 cents.

DRILL BOOK, to accompany Phonics in Reading. Contains lists of words which a child should learn to sound and pronounce at sight in the first three grades. Cloth, 64 pages. Price 18 cents.

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For Arbor Day

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A song for the forest grand,
The garden of God's own land,
The pride of His centuries.

Hurrah! for the kingly oak,
For the maple, the sylvan queen,
For the lords of the emerald cloak,
For the ladies in living green.

For the beautiful trees a song,
The peers of a glorious realm,
The linden, the ash, and the elm,
The poplar stately and strong.
Hurrah! for the beech-tree trim,
For the hickory staunch at core,
For the locust thorny and grim,
For the silvery sycamore.

A song for the palm,—the pine,
And for every tree that grows
From the desolate zone of snows
To the zone of the burning line.
Hurrah! for the warders proud
Of the mountain-side and vale,
That challenge the thunder-cloud,
And buffet the stormy gale.

A song for the forest aisled
With its gothic roof sublime,
The solemn temple of time,
Where man becometh a child,
As he lists to the anthem-roll
Of the wind in the solitude,
The hymn which telleth his soul
That God is the voice of the wood.

So long as the rivers flow,
So long as the mountains rise,
May the forest sing to the skies,
And shelter the earth below.
Hurrah! for the beautiful trees,
Hurrah! for the forest grand,
The pride of His centuries,
The garden of God's own land.

—W. H. VENABLE.

The Oak

A glorious tree is the old gray oak;
He has stood for a thousand years—
Has stood and frowned
On the trees around,
Like a king among his peers;
As around their king they stand, so
now,
When the flowers their pale leaves
fold,
The tall trees round him stand, arrayed
In their robes of purple and gold.
He has stood like a tower
Through sun and shower,
And dared the winds to battle;
He has heard the hail,
As from plates of mail,
From his own limbs shaken, rattle;
He has tossed them about, and shorn
the tops
(When the storm has roused his
might)

Of the forest trees, as a strong man
doth
The heads of his foes in fight.
—GEORGE HILL, *Fall of the Oak.*

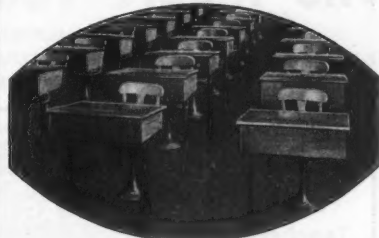
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Plant a Tree

He who plants a tree
Plants a hope.
Rootlets up through fibres blindly grope;
Leaves unfold into horizons free.
So man's life must climb
From the clods of time
Unto heavens sublime.
Canst thou prophesy, thou little tree,
What the glory of thy boughs shall be?

He who plants a tree
Plants a joy;
Plants a comfort that will never cloy.
Every day a fresh reality.
Beautiful and strong,
To whose shelter throng
Creatures blithe with song.
If thou couldst but know, thou happy tree,
Of the bliss that shalt inhabit thee.

He who plants a tree
He plants peace.
Under its green curtains jargons cease,
Leaf and zephyr murmur soothingly;
Shadows soft with sleep
Down tired eyelids creep,
Balm of slumber deep,
Never hast thou dreamed, thou blessed tree,
Of the benediction thou shalt be.

He who plants a tree
He plants youth;
Vigor won for centuries in sooth;
Life of time, that hints eternity!
Boughs their strength uprear,
New shoots every year
On old growths appear.
Thou shalt teach the ages, sturdy tree,
Youth of soul is immortality.

He who plants a tree
He plants love;
Tents of coolness spreading out above
Wayfarers, he may not live to see.
Gifts that grow are best;
Hands that bless are blest;
Plant; life does the rest!
Heaven and earth help him who
plants a tree,
And his work its own reward shall be.
—LUCY LARCOM.

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The Oak Tree

Sing for the oak tree, the monarch of the wood!

Sing for the oak tree, that groweth green and good!

That groweth broad and branching within the forest shade;

That groweth now, and still shall grow when we are lowly laid!

The oak tree was an acorn once, and fell upon the earth;

And sun and shower nourished it, and gave the oak tree birth;

The little sprouting oak tree! two leaves it had at first,

Till sun and shower nourished it, then out the branches burst.

The winds came and the rain fell; the gusty tempest blew;

All, all, were friends to the oak tree, and stronger yet it grew.

The boy that saw the acorn fall, he feeble grew and gray;

But the oak was still a thriving tree, and strengthened every day.

Four centuries grows the oak tree, nor does its verdure fail;

Its heart is like the iron-wood, its bark like plaited mail.

Now cut us down the oak tree, the monarch of the wood;

And of its timber stout and strong we'll build a vessel good.

The oak tree of the forest both east and west shall fly;

And the blessings of a thousand lands upon our ship shall lie.

She shall not be a man-of-war, nor a pirate shall she be;

But a noble Christian merchant ship, to sail upon the sea.

—MARY HOWITT.

Woodman, Spare That Tree

Woodman, spare that tree!

Touch not a single bough!

In youth it sheltered me,
And I'll protect it now.

'T was my forefather's hand

That placed it near his cot,

There, woodman, let it stand;

Thy ax shall harm it not!

That old familiar tree,

Whose glory and renown

Are spread o'er land and sea—

And wouldst thou hack it down?

Woodman, forbear thy stroke!

Cut not its earth-bound ties;

O, spare that aged oak,

Now towering to the skies!

When but an idle boy

I sought its grateful shade;

In all their gushing joy,

Here, too, my sisters played.

My mother kissed me here;

My father pressed my hand—

Forgive the foolish tear;

But let that old oak stand.

(Continued on page 324)

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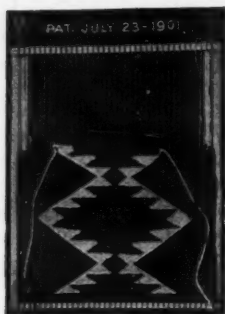
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My heart-strings round thee cling,
Close as thy bark, old friend;
Here shall the wild-bird sing,
And still thy branches bend.
Old tree! the storm still brave!
And woodman, leave the spot;
While I've a hand to save,
Thy ax shall harm it not.

—GEORGE P. MORRIS.

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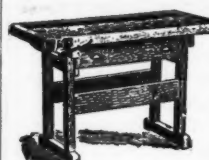
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